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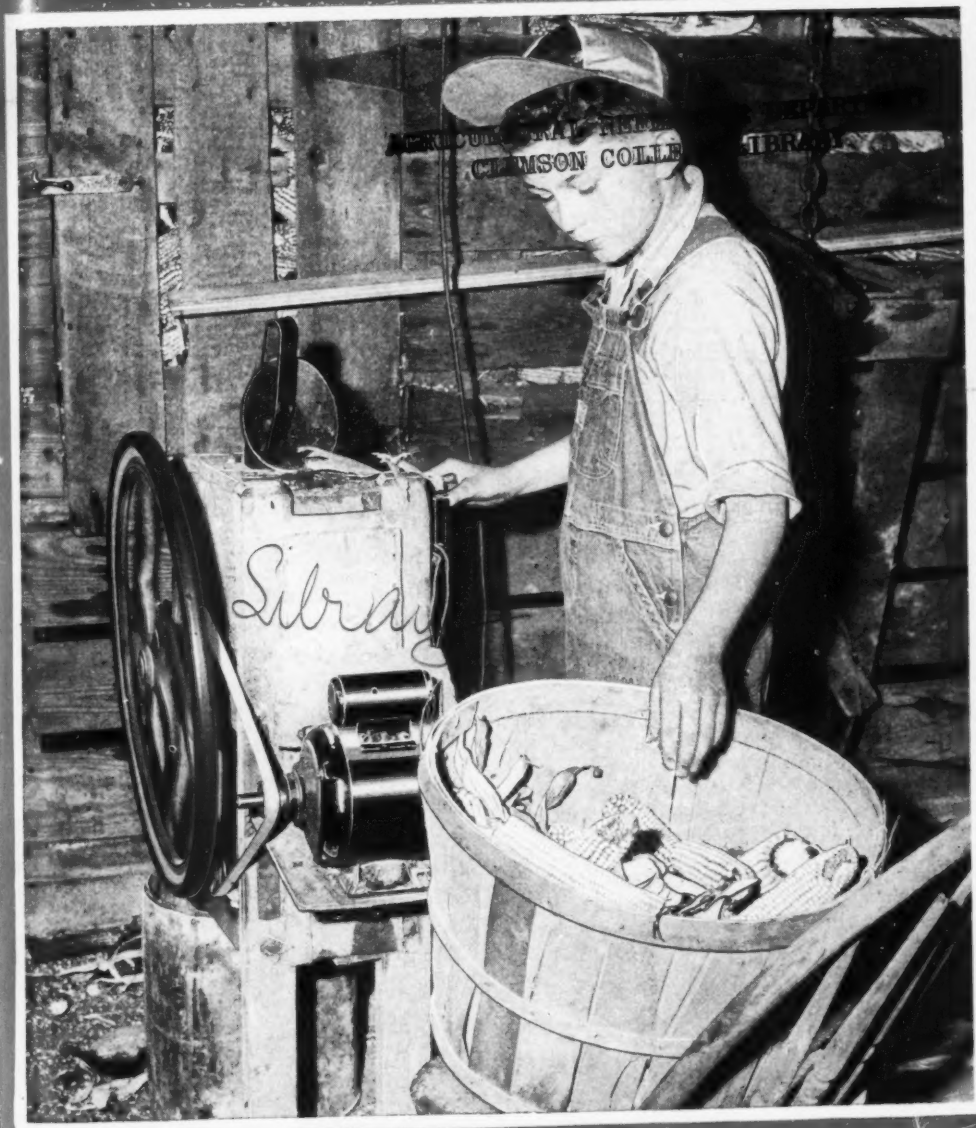
ELECTRICITY ON THE FARM *Magazine*

JUNE-JULY, 1947

Selling Milk to Warm Profits . . . Georgia Water . . . Potato Cleaner Gets Market . . . Umph for Lawn Mowers . . . Dial-the-Fabric Irons . . . Canning Time

20th Year . . . . . No. 6



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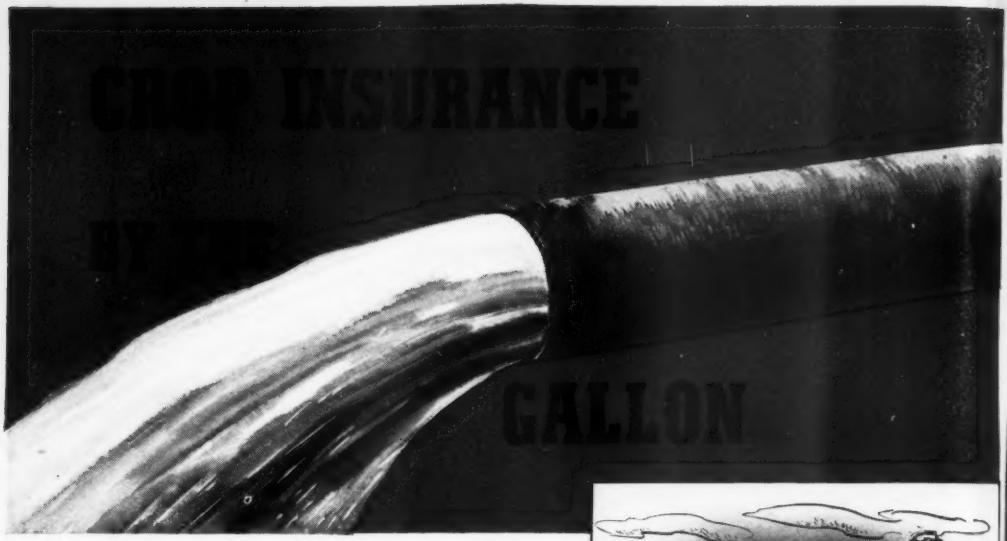
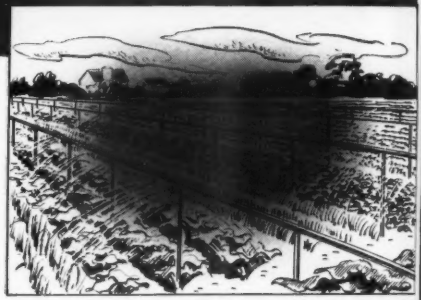


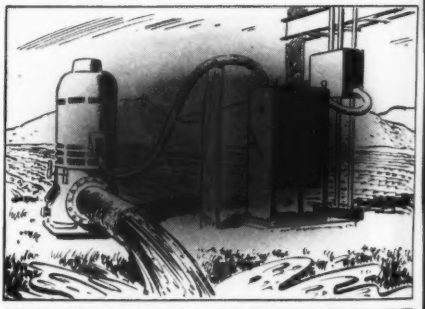
TO PROTECT precious crops, more electrically driven pumps will go into operation this year than ever before in this nation's history. Even in the so-called "humid" areas, far-sighted farmers will be prepared for that summer dry spell when thriving crops would otherwise shrivel under a hot sun and the year's income shrivel with them. These farmers know it's the bumper crop that pays over and above the cost of seed and fertilizer, equipment and labor, and they want to eliminate removable risks. That's why they choose a dependable motor-driven pump for crop insurance.

WHY DO FARMERS CHOOSE GENERAL ELECTRIC MOTORS?

There's a type of irrigation for every type of land and crop. There is also a wide selection of pumps and motors to do the job. And General Electric has engineered and built equipment that won't fail when you need it most. G-E motors have been specially designed so there is no danger of oil draining away from bearings, or dirt entering the bearings during the period when they are not in use. The motors give full-rated horsepower at the flick of a switch—no need to tinker with parts or turn over a heavy engine. They're quiet running, and with G-E control they can be automatic and have complete overload protection—there'll be no danger of burning out the motor if something goes wrong with the water system. *Many G-E pump motors have more than twenty-five years of service behind them, and they're still going strong!*

G-E standardized designs work perfectly with all types of pumps. Select the right motor for the right pump in the right location, and you'll get lifetime service—when the motor is General Electric. *Farm Industry Division, General Electric Company, Schenectady 5, N. Y.*

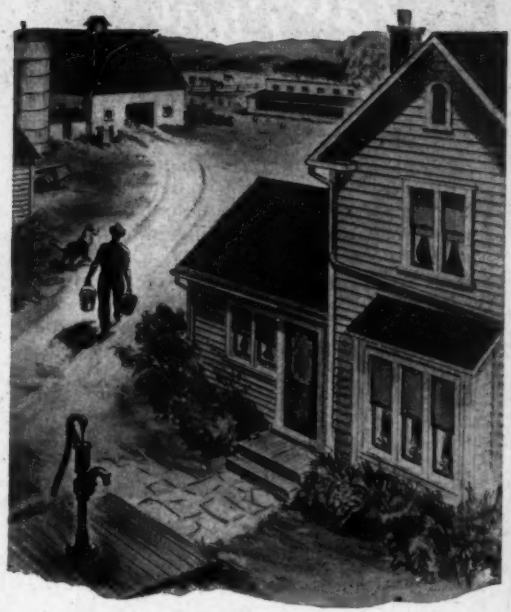




GENERAL ELECTRIC

IF YOU PUMP WATER BY HAND...

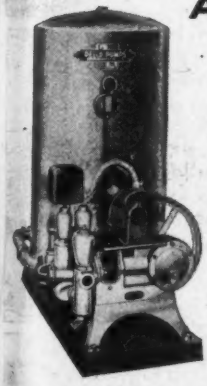
You Carry Water MILES and MILES



If you depend on an old-fashioned hand pump you tote water miles and miles every year. Pumping water and carrying it *any distance* is tiresome work, time-taking—and unnecessary.

On one Ohio farm a time and motion study showed that members of the family actually lugged more than eleven tons of water yearly—over a route totaling forty-nine miles.

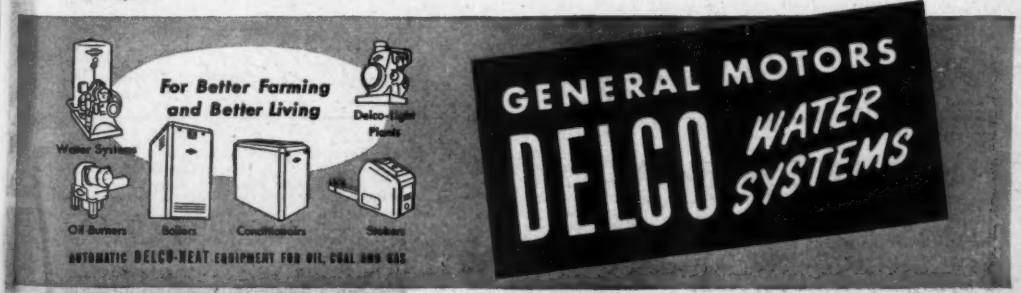
All the Water You Need— *Automatically* with DELCO Water Systems



Delco Shallow Well Water System

A Delco electric Water System will supply all the running water you need for livestock, kitchen, bath, laundry and garden—piped conveniently to faucets in the house, barn and other buildings. A Delco Water System will pay for itself quickly in labor saved and in increased farm production.

There are *Wellmaster* Pumps and Water Systems for shallow wells, deep wells and jet applications. Your Delco Water System dealer will be glad to show you how you can enjoy the fullest use of running water by means of an installation "tailored" to fit your particular requirements. See him—or write for free folders. DELCO APPLIANCE DIVISION, General Motors Corporation, Rochester 1, N. Y.



Editor's Chat

NATIONAL FARM SAFETY WEEK

July 20-26 is National Farm Safety Week. It is a time to wind-up our mental processes so we can run safely through another year. And they need winding. One out of every 10 farmers will suffer a disabling injury in 1947 unless we improve our record. During your dinner hour every day two farm residents will be accidentally killed and 205 injured. That means an average of more than one farm person killed by accident every day in every state. It is hard to believe. The National Safety Council has the figures. Home accidents and falls top the list; motor vehicle accidents are second; farming operations third. *Carelessness* is the chief offender in causing accidents. Talk over the accident hazards on your farm with your family and your help. Decide what each member of the farm group can do to eliminate these hazards. Accident statistics are uninteresting. But if *your* farm contributes to them you'll be interested too late; and you may have a heart ache.

SQUIRREL JUMP

Friendly squirrels share our back yard. They eat nuts off the window ledge in snowy weather. Sometimes I watch them from my study window. This morning one little fellow, full of wiggle, scampered up a tree. He explored the branches, then ran out on a little swaying limb where it was not more than a half inch in diameter. He poised, sized-up the next tree, and jumped. Whew! There was risk in that jump from a springy twig. He sailed about five feet straight across to the trunk of the next tree. Without stopping, he continued his merry way till he found some buds he liked. Brave squirrel! He got the buds. —No, I don't want to be a squirrel. But America became great because its citizens were not afraid to jump. Too many of us these days get out on a limb. It sways. We lose our courage and just hang on and yell for Washington or the Union boss to get us down. Someone else gets the choice buds and nuts.

Thomas Edison was not afraid to jump. He invented the stock ticker and improved the telegraph. Then he set up a factory and built them. Then he sold them. He invented the phonograph; he manufactured it; he sold it. He invented the motion picture camera. But the camera was no good in itself. So he had movies made; built motion picture theatres; gave us movies. He invented the electric light. But first he "saw the light" and jumped in and organized a $360,000 electric light company. Then he invented the lamp, the generators, the fuses, the meters to make that lamp serve the public.

Consider the jump of the squirrel!

THE HONEYMOON MUST END

A honeymoon is a delicious affair. Honeymooners forget their troubles. They travel and enjoy life. But the fellow who marries just for a honeymoon is doomed to brief happiness. The sensible pair marries "for the long pull." There may be "better or worse" at times after the honeymoon, but the real satisfactions of married life come through the years.

Readers of this magazine are married to farming. You have been on a "honeymoon" with war prices, good weather and good markets. The honeymoon must end. Soon you are going to be on the return trip. Like other honeymoons, this one should have been a happy experience. It should carry pleasant memories and an understanding and enthusiasm to help you on in your marriage to the farm. You learned some things about married life and about Niagara Falls. Cherish the memories and the things you learned. And on the way home, pick up a sack of fortitude and some plans for the years to come. Those years can be pleasant, married to a farm, even though the honeymoon is over.

OUR BIRTHDAY

June is our birthday. ELECTRICITY ON THE FARM is 20 years old this month. We've grown, too. In 1945 we came to 300,000 farm homes; last year to 400,000. This year our print order is for 520,000.

Geo. W. Kable

ELECTRICITY ON THE FARM

The National Magazine of Rural Electrification

CASE-SHEPPERD-MANN PUBLISHING CORP.
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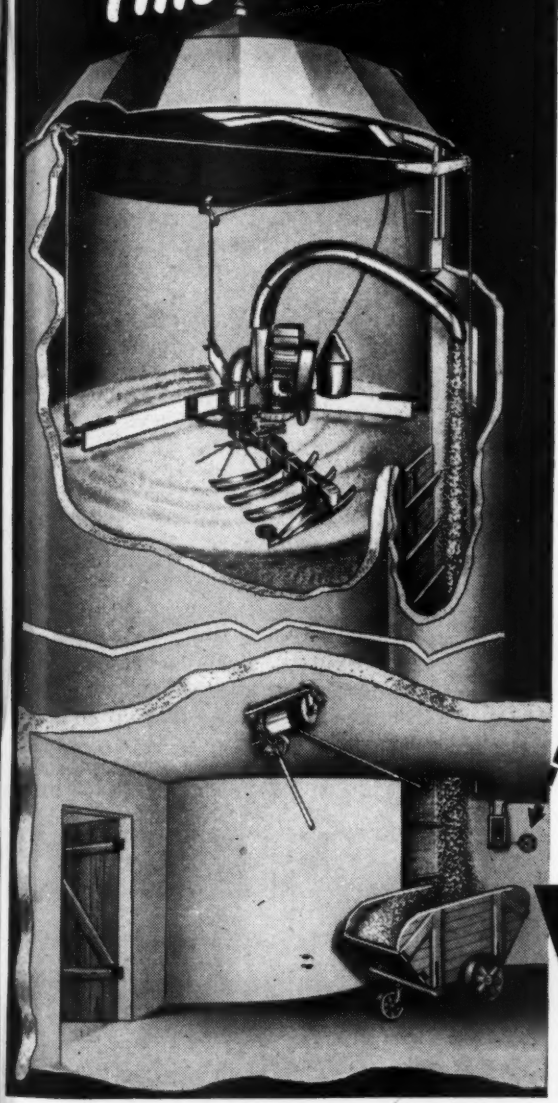
you, too, can SAVE 220 hrs. this winter



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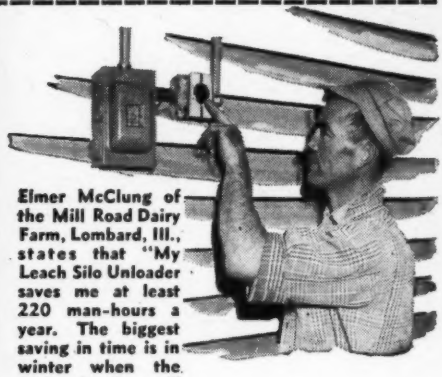

Elmer McClung of the Mill Road Dairy Farm, Lombard, Ill., states that "My Leach Silo Unloader saves me at least 220 man-hours a year. The biggest saving in time is in winter when the silage is frozen."

THE Leach Silo Unloader takes over one of the worst jobs on the dairy farm—does away with climbing and hard, hand pitching in a cold, damp silo. No large chunks to thaw — silage comes down completely broken up, ready to feed. Level skimming off of top eliminates spoilage, saves silage.

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Everything is automatic! Electrically controlled from switch and automatic winch below. Thoroughly tested and proven on dairy farms for over 3 years. Performance fully guaranteed. Mail coupon above.

THE LEACH Silo Unloader

Patent Pending

My New Crane Kitchen Is a Real Work-Saver

"Everything's so sparkling white—so easy to clean in my new Crane kitchen that washing-up time seems to fly by. I turn a faucet on my sink and there's all the water I want—I raise the drain and out it goes.

"And it's not just the kitchen! When I think of the buckets of water I used to carry for laundering, and when I see all the convenience of our shiny bathroom, I wonder how we ever got along without Crane plumbing.

"Of course, John appreciates it even more, the way he has running water for the stock, and for cleaning up. He says it cuts the chores right in half."

Your Crane Dealer can supply and install complete bathrooms, kitchens, and laundries—fixtures, pump, piping, everything you need. The sooner you get yours in, the sooner you can begin to enjoy the comfort of running water. Drop in at your Crane Dealer's next time you're in town.

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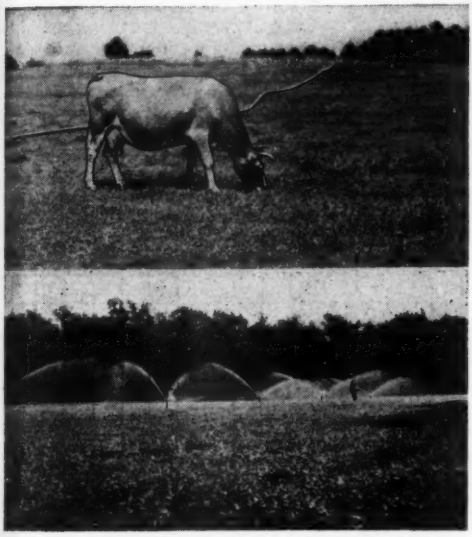
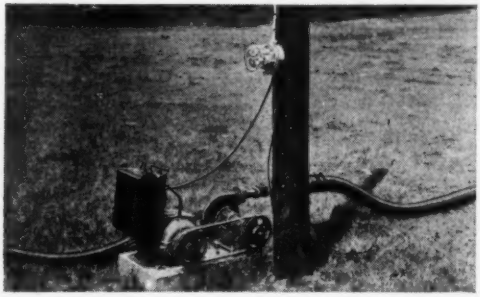
Georgia Water

THIS is not a story about anything like Lithia water or fermented cotton juice or the like of it. It is just water that an Oregon boy put on a Georgia field. The man who came from Oregon is Everett H. Davis. He is now extension agricultural engineer at the University of Georgia, Athens, Ga. He saw what irrigation would do for pastures out in Western Oregon where they have from 40 to 80 inches of annaul rainfall. So when he went to Georgia he carried the water-on-the-grass idea with him.



This story is not long. It is just three pictures and a few statements from a letter. But those statements really tell something. Since we are heading into the droughty pasture season, here they are.

The cows preferred the irrigated pasture. They did not have to be fenced to be kept on it. The experimental irrigated area covered three acres. The cows on it produced 100 pounds more milk per day (33 pounds per acre) during periods of dry weather. The top picture (at left) shows a cow grazing on the irrigated pasture. The water supply line is of portable slip-joint pipe.



The picture (lower left) shows the type of irrigation sprinklers used. They are of the slowly rotating type that cover a circle of as much as 150 feet in diameter. This pasture was a mixture of Ladino clover and Dallas grass. Pigs preferred the fresh green mixture to corn—and got fat on it.

Shown above is the little rig that pumped the water. It is a 5 hp electric motor driving a 120 gallon per minute centrifugal pump.

Look for COVERALL ISSUE IN AUGUST

Our August-September issue will be different from anything we have published. It will be a COVERALL ISSUE. Coverall is the right word. We will cover all phases of the use of electricity on the farm and in the farm home. We are going to have on our coveralls to do it, too. It will be a worker's issue with boiled down facts on electrical farm equipment now available, its cost, how it is used, the amount of electricity it uses, and what results farmers are getting with it. It will be a handy issue to keep and refer to when planning your year's program or buying new equipment. Because there are many uses for electricity, each will be treated briefly, but specifically. Not much to read, but answers to the questions that you want answered about equipment and processes.

There will be no "full dress" articles or "silk nightie" stuff in the issue. It will be "coverall, pliers and dishpan" material all the way through. Or, perhaps I should have said "apron, motor and cooker" stuff. An issue to tell your neighbors about.

Cooling Milk to Warm the Profits

A Comparison of the Rate of Cooling with Still Water, Running Water, Ice Water, Mechanical Refrigeration and Refrigeration With Agitation

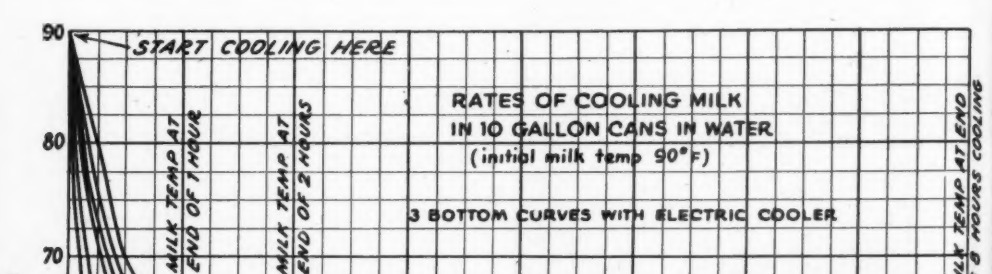
FROM the standpoint of health, any milk used for human consumption is better if it is cooled immediately after being drawn. Most dairymen, however, are not in business just for health. You make money by cooling milk.

There are a number of ways of making a profit on milk cooling. Here are some of them. 1. You get a premium on higher quality. 2. You are enabled to sell market milk instead of milk for butter or cheese. 3. You save summer rejections of sour milk. 4. Because of good quality you have a preferred market; less goes into surplus. 5. If you sell sweet cream, it may save you a trip or two a week to the cream station. 6. In many places milk ordinances make it necessary to cool milk in order to sell it at all.

The best way to cool milk depends on the requirements of your market, how and when you ship, and the gain realized by cooling. Many farmers who sell to butter and cheese factories cool with well or spring water. Some still use ice. The mechanical cooler has become one of the most popular pieces of equipment on dairy farms.

With the aid of Prof John E. Nicholas, research agricultural engineer of Pennsylvania State College we have prepared some typical milk-cooling curves. They tell you what you may expect from the different methods of cooling. The curves are based on experimental work done at the Pennsylvania Agricultural Experiment Station. The conditions are such as one might expect to find on farms.

Since the bacterial count in milk does not increase much until about two hours after milking, it is important to have the milk temperature down by the end of those two hours. Some bacteria or spore growth takes place at practically all temperatures. The rate of growth is greatly reduced as the temperature is lowered. At 70° or above, the bacteria increase several hundred times as fast as at 50°. At 60° the increase takes place much slower. This is the temperature at which milk must reach some plants to be accepted. For higher quality milk, the temperature should be reduced to 50° or below and held at that

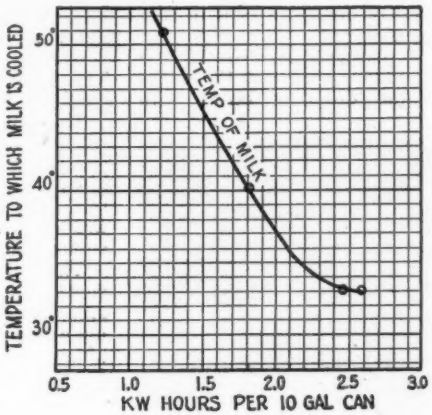


point. If the milk is to be on the truck for some time, or hauled during the heat of summer days, it should be colder to start. Milk cools much faster in water than in air. Cans should be submerged in water below the level of the milk in the cans. Leave the can lids on when cooling.

The top cooling curve shown in the diagram is for one 10 gallon can of milk in a tank of 110 gallons of water. The water at the start was 56°; the milk 90°. In one hour the milk was cooled to 64½°; in two hours to 62½°. At the end of eight hours the water and milk were both at about 60°. No water was added to the tank. Neither the water nor milk was agitated. But note that there was 11 times as much cooling water as milk.

It should be pointed out that all the curves represent average milk temperatures in the can. The milk temperature at the top of the can was from 3° to 10° higher than at the bottom. It remained higher throughout the entire cooling period. In the case just cited the milk at the top of the can was 68° at the end of one hour and about 66° at the end of two hours. At the end of eight hours it was 65°. This difference in temperature is the reason for stirring milk as it is cooled. There is considerable doubt whether the evening up of the temperature by stirring more than offsets the bacteria introduced on the stirrers. It depends upon the cleanliness and care used in handling the stirrers.

The second curve represents the cooling of one 10 gallon can of milk in 120 gallons of water with fresh water running into the tank from the tap at the rate of about 20 gallons per hour. The milk was at 90°; the water 58°. Note that although the water was 2° warmer than the still water in the first test, the cooling was faster. This was due to the flow of water past the can, and to keeping the temperature down to that of the tap water. Allowing for the 2° difference in water temperature, the advantage of tap water at the end of one hour was 3°. At the end of two hours it was also 3°. The milk temperature at the top of the can at the end of two hours was 63° (61° allowing for difference in water temperature).



Electricity required to cool a 10 gallon can of milk to different temperatures. Milk was 98.6° at start. Cooling to 50° requires about 1¼ kw-hrs. Cooling to 40° takes 1.8 kw-hrs. Includes power for normal summer milk cooling, including cooling the water in the tank, heat losses through tank, etc.

The third curve is an ice and water cooling curve. One 10 gallon can of milk was placed in 110 gallons of 55° water and 25 pounds of ice added. The average milk temperature at the end of one hour was 61.8°; two hours 58.5°; eight hours 55.7°. The top of the can at the end of two hours 61°. The water remained at 55° throughout the cooling period. The 25 pounds of ice was melted at the end of the 3rd hour. After 6 hrs. the cooling water and milk began to warm up. More ice and less water would give somewhat faster cooling.

The fourth curve from the top represents the cooling of one 10 gallon can of milk in a one-can electric milk cooler. Water to milk ratio was 3½ to 1. The temperature of the milk at the start was 90°; the water 35°. There was a bank of ice on the coils. No agitation. In one hour the average milk temperature was down to 57°; in two hours to 52°; and in eight hours to 38°. At the end of one hour the top milk was at 61°; after two hours at 57°.

The fifth curve shows the cooling of one 10 gallon can under conditions identical with the fourth curve except that the water in the cooler was agitated. At the end of one hour the average milk temperature was 49°; at two hours 46°; at eight hours 35°. It is also significant that at the end of one hour the top milk was down to 52°; and at the end of two hours to 49°.

The bottom curve shows what can be accomplished with an electric milk cooler with agitation when there is sufficient ice built on the coil to keep the water temperature from rising above 40°. At the end of the first hour the average milk temperature was 44.8° and at the end of the second hour 42.2°. The top and bottom temperatures were 48° and 42° at the end of the first hour and 46.5° and 38° after two hours. The final average temperature at the end of the cooling period was 33.8°. That's ideal.

The curves shown are for specific conditions. You should understand that different sizes of coolers, different water to milk ratios, and different methods of agitation will give different results. Also, on many farms the spring water or tap water will not be as cold as 58° in hot weather. Don't guess. Measure it with an accurate thermometer. In general the curves shown are representative of what you may expect to take place in milk coolers of common sizes used on farms.

One statement should be added. Where cooling milk to 50° or lower is necessary on farms, there is probably no piece of electric farm equipment which has paid its way and made more profit than the electric milk cooler. The best proof is the dairyman who uses one.

There are 30 parts in a pull-chain lamp socket and it requires 82 separate operations to assemble it.

Electric Dropping Board Cleaner

SEVENTEEN years ago, Roy White of the Detroit Edison Co. supervised the installation of a dropping board cleaner on the farm of John Miller, Macomb Township, Michigan. The cleaner was used for many years before Mr. Miller went out of the poultry business. Recently Mr. White checked up on the installation for us. While the chains are rusted out from disuse, Mr. White says the cleaner could be put back in condition in a day's time. This is the only cleaner of the type of which we have record. It has given good service. Many of you will probably be interested in it.

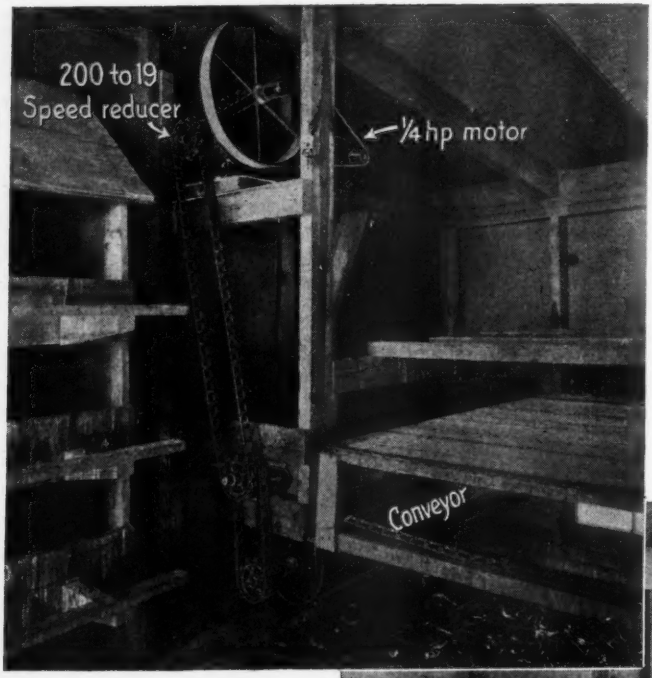
The cleaner was installed in a Michigan Shed Type Poultry House 20 ft wide and 30 ft long. The dropping board is 4 ft wide and 30 ft long. The boards are laid lengthwise instead of crosswise as is usually done.

The cleaner is made of two continuous chains at the edges of the dropping board with scrapers between them. The scrapers were spaced 4 ft apart. There were three different kinds. First was an angle iron, then a board, then a piece of rubber belting. The three different types did a better job of cleaning than any one type. The upper strand of chain with the scrapers rests on the dropping board. The lower return chain slides on strips of wood to relieve the weight on the sprockets. The scraper chains move at a speed of 40 ft per min.

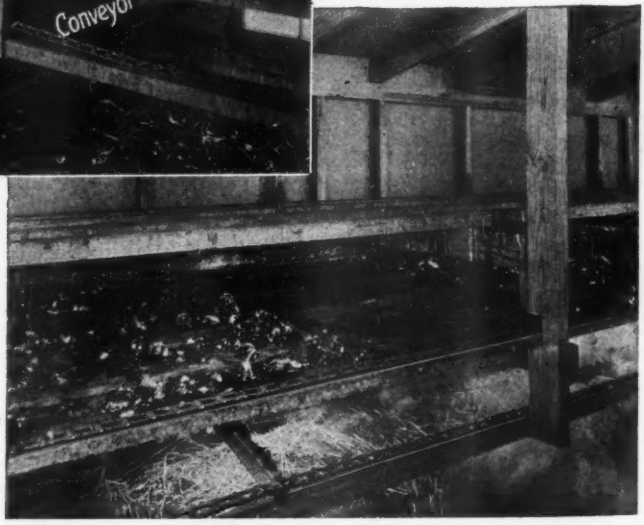
The driving mechanism consists of a ¼ hp motor belted to a pump-jack speed reducer which gives a sprocket speed of 19 rpm. The 30 ft length of scraper was just about all the ¼ hp motor would handle.

The Miller cleaner also had a conveyor unit. It was made of a semi-cylindrical trough containing a screw conveyor. The droppings were scraped into this trough and were conveyed through an opening in the back wall into a cart or bag. This was an extra convenience, but the cleaner would save most of the labor without it.

The dropping boards were kept sprinkled with dehydrated lime, and since cleaning only called for snapping a switch, they were cleaned daily.



Above: Operating mechanism of the cleaner. The scrapers move at 40 ft. per minute. The screw conveyor carries the droppings outside of the house.



Right: A section of the dropping board showing one of the scrapers and the support of the return chain.

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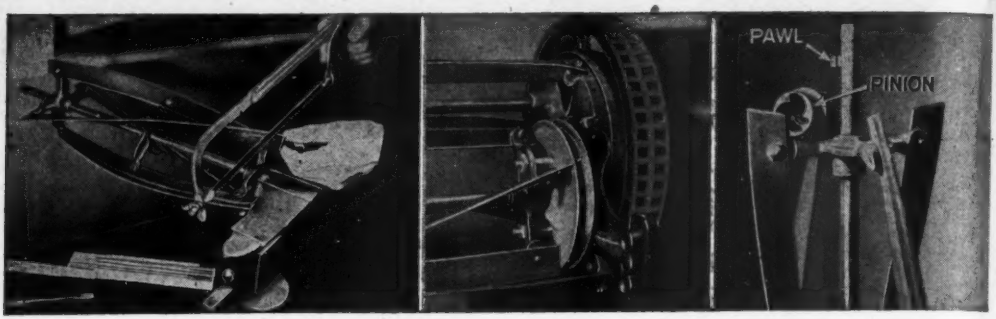


Left: Take the mower apart and cut ⅜" or ½" off the end of each reel blade at one end to give clearance for the pulley and belt between the reel and wheel. A hacksaw will cut them easily. Use high-speed hacksaw blades if you want them to last. **Center:** Drill ¼" holes through the pulley and two arms of the reel spider and bolt the pulley against the ends of the cutter blades. Get a pulley drilled to fit the reel shaft. On some mowers it may only be necessary to fasten the pulley to the shaft with set screws. **Right:** When reassembling the mower, leave out the pawls, or both the ratchet pinions and pawls on the ends of the reel shaft. These are used to drive the reel when the mower is hand pushed. The motor will drive it now. If you want the motor to propel the mower, leave in the pinions and pawls, but interchange them on the two wheels.

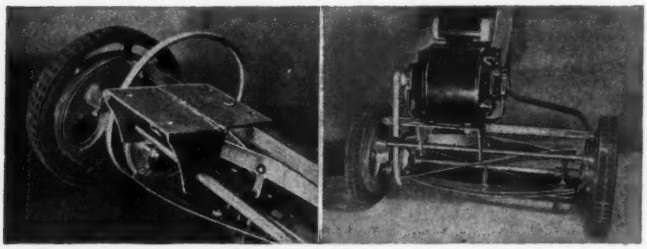
Electric Umph for the Lawnmower

SOME of you may have seen these pictures back in June 1942. Well, we have had so many requests for instructions how to electrify an ordinary lawnmower that we are giving them to you again. The pictures are of the editor's lawnmower. He took them in his own shop, so this is no second-hand information.

The mower is still in use. It works well. Confidentially, for a commuter with a small lawn and a job that wears out his pants faster than his shoes, he should push instead of plug. On a big farm lawn, that mower would sing a sweet tune.

This year electric lawnmowers are again available. Several manufacturers are making the kind that looks like sharpened fan blades on a vertical shaft. They whirl and cut like a sickle. Some are driven by rechargeable storage batteries. That gets away from the cord.

. . . . . (More on page 39)



Left: To support the motor, a base was made of ⅛" steel bent and drilled as shown. My scrap pile did not produce anything wider than 3", so I welded two pieces together. Strap-iron and a ¾" board would do. The tie rod is the front support for the base and a piece of 1" angle iron fence post bolted through the small lugs that hold up the handle is the rear support. I have no drill, so all drilling was done with a chuck in my wood-turning lathe. **Right:** The assembled job. Nicely balanced on the wheels. I used 2" and 5" pulleys and a 28" x ½" V-belt. 1½" and 4" pulleys with a 24" x ⅜" V-belt would be cheaper and possibly better, as it would give more clearance for the grass. Reel runs at about 640 rpm, which is equivalent to walking just under 3 miles per hour. Holes in motor base are slotted, which allows for belt adjustment. If the motor runs in the wrong direction, interchange the leads from the motor windings in the connection box. The motor has built-in overload protection.

A snap switch at the top of the handle makes for easy starting and stopping. A board screwed to the under side of the handle gives a place to wind the cord. No. 18 rubber covered super-service cord is best if it is available. In using, work out a system for mowing, always keeping the cord on the ground to the left or right of you and working away from it.

"There's Stainless Steel from Start to Finish in Our McCORMICK-DEERING"

Take it from someone like this young lady who *uses* and *cleans* the family cream separator: non-rusting stainless steel all the way through from supply can to spouts makes a lot of difference!

A difference in quality of cream produced . . . butterfat and bacteria don't readily remain on this satin-smooth surface. A difference in time saved in cleaning . . . the highly-polished stainless steel can, bowl, discs, covers and spouts wash so easily. There's no soft tin to wear off the bowl and discs, and throw them off balance.

Modern styling goes hand-in-hand with the gleaming stainless steel found in all four McCormick-Deering sizes—500, 750, 1000 and 1250 lbs. per hour. Ask your IH Dealer for a demonstration.

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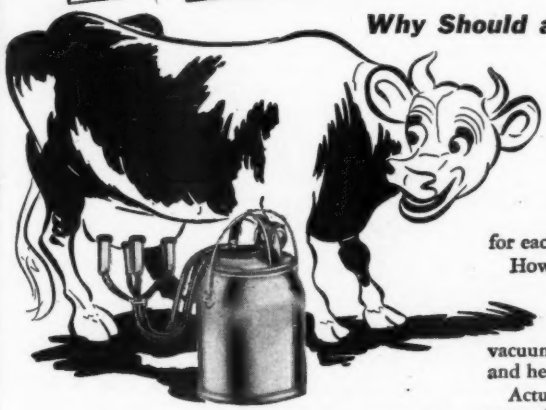


Why Should a Cow Adjust Herself to Milker Vacuum when the McCORMICK-DEERING *Fits the Vacuum to the Cow!*

Fits it *automatically* this way: the amount of vacuum furnished by the McCORMICK-DEERING Milker is regulated and varied for each cow right in the milk hose.

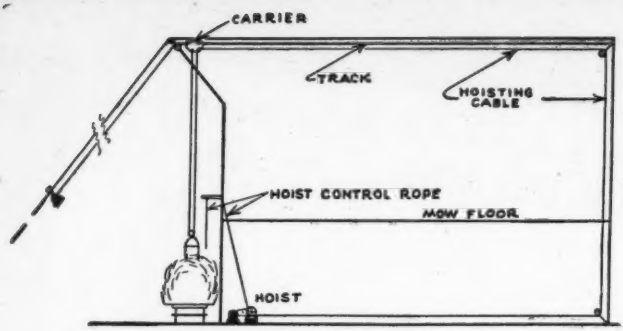
How does it do it? As milk flow increases, vacuum will drop from its 13 inches maximum because of this control in the milk hose. That's why, with an easy-milker, less vacuum is automatically applied as milk flows quickly and heavily through the hose.

Actually, the *cow* controls the vacuum, getting large or small amounts as the need arises. The McCORMICK-DEERING doesn't require separate adjustments in the vacuum regulator for each cow. Remember, the variable vacuum essential for hard- and easy-milking cows can be applied only by the milker with a milker hose.

Rely on the McCORMICK-DEERING for a milking job that will save you time and money. Your International Harvester Dealer has the full story.

OUR MILKER PRICES NOW ARE THE LOWEST THEY'VE EVER BEEN

After recent price reductions, you can buy McCormick-Deering Milker pumps and stainless steel units at their lowest prices in 17 years of manufacture. You get this great milker today with the most improvements ever offered, with no sacrifice in materials or design.



Rigging For

Single Drum Hay Hoist

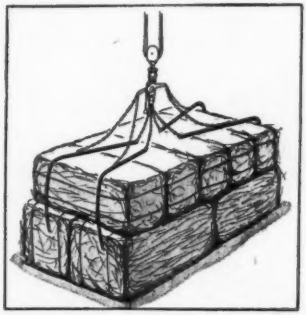
IF YOU were short of men and horses or trucks when you put up your first cutting of hay, perhaps you will appreciate this labor and horse saving device. The sketch shows one way to rig up a single drum electric hoist so *one man* can do the whole job of putting hay in the mow without getting off the load. This system was worked out at Oregon State College about 20 years ago. It is still good.

The purpose of using a single drum hoist with a weighted pull-back is to have the controls simple enough so they can be manipulated from the load. That saves a man. The motor saves a horse. Also, the single drum hoist saves you money.

The hoist may be located in the mow or on the first floor, wherever it is most convenient. The pull-back weight may be mounted on a pulley on a cable sloping away from the end of the barn. Or it may come straight down the end of the barn inside or outside. If it travels straight down, you will probably have to support it on a pulley with a double rope to give you enough travel to pull back the carriage. The weight must be heavy enough to unreel the cable from the hoist drum. The fork will come down of its own weight when it trips at the end of the track.

The controls consist of a cord attached to a pull-chain switch which starts and stops the motor, and the hoist control rope. To control the hoist easily from the load requires the use of a hoist with a single lever control. This lever works against a spring or weight. When released, it sets the brake. When held in mid-position, the brake and clutch are both released. When pulled to the forward position, the clutch is thrown in and the hoist drum hoists.

Here's the way it works when you are on the load. You drive up and pull the cord that starts the motor. Then you pull the control rope to mid-position which releases the drum and the counter-weight pulls back the carrier. When the fork gets down within reach, you release the control rope. The fork stops just above the load. You untwist the rope and pull the fork to where you want it without having to lift and wrangle it in the loose hay. When you are holding the fork where you want it to drop, just pull on the control rope and it will come down slow and easy. Now you stick the fork and stand back. Then you give a strong pull on the control rope to throw in the clutch, and up goes the load. If you fall or release the control rope, the load will stop wherever it happens to be.



Method of hoisting baled hay with loose-tined fork and regular track and carrier. The bottom layer consists of four bales laid flat. The top layer is five bales crosswise on edge. The pressure of the fork holds the bottom bales together so they will not buckle. One forkload takes nine bales. If the hay rack is loaded with this lift in mind, the bales need to be handled only when they are being placed on the load.

Anyone who once uses this system would not use any other. The hoist may be operated by a motor of 2 to 5 hp, depending on the speed of hoisting.

With grapple and loose-tined forks it is possible to handle baled hay effectively with hoist and carrier. As many as ten bales may be hoisted at a time. By using a special carrier it is not necessary to lift the bales all the way up and drop them from the track.

Slings made of snow fence are said to be effective in handling chopped hay. Special attachments for handling slings on the regular carrier are now available.

The Illinois system for using slings with chopped hay is to place three slings crosswise of the wagon. The load is then taken off in three lifts.

Build-up or Fall

Nothing is static. A house, a reputation, a friendship, a business or a country. All of them must be kept in repair. All of them must be constantly built up lest they fall into ruins. R. S. Martin, Carolina Power & Light Co.

The filament of a 60-watt incandescent lamp runs a temperature of 4314 degrees F.—ten times the heat in an oven necessary to brown a pie.

NATIONAL FARM SAFETY WEEK
July 20-26

So many reasons why you'll want this new

FRIGIDAIRE ELECTRIC RANGE

So Fast! Instant-heating surface units. Oven reaches baking heat in 5½ minutes; holds 6 loaves of bread.

So Easy! Definite cooking heats. Automatic signals. Clock control cooks oven meal while you're away.

So Safe! No flames or fumes to endanger your home or family. Work surfaces are cool.

So Clean! No smoke or soot to smudge pots, pans or walls. Porcelain finish, inside and out.

So Thrifty! Oven cooks with part-time current. Deep-Well Thermizer cooks meal for as little as 2c.

Frigidaire made only by
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FRIGIDAIRE COLD-WALL
Fits farm kitchens to a "T"

Big food compartment is adjustable 16 ways. Room for 3 gallons of cream, 15 dozen eggs or big crock of butter *plus* food for the family. Aluminum shelves. Super-Freezer Chest holds 35 lbs. of frozen foods.

No moisture-robbing air circulation — no need to cover foods. Extra-moist Hydrators for fruits, vegetables.

Meter-Miser is simplest cold-making mechanism ever built; uses less current than ordinary light bulb.

You're twice as sure with two great names

Frigidaire made only by
General Motors

See your Frigidaire Dealer about Frigidaire Electric Ranges, Refrigerators, Home Freezers, Water Heaters, Kitchen Cabinets, Automatic Washers, Milk Coolers. Frigidaire Division, General Motors Corp., Dayton, O.; Leaside, Ont.

Listen to "THE MAN CALLED X" every Thursday night. See your newspaper for time and station.

MILK up to 25% FASTER with NEW 2-PIECE TEAT CUP!

Send today for FREE Circular picturing my Patented, 2-piece Teat Cup. Nothing else like it. READ HOW it milks up to 25% faster, cleaner, better, with less strippings. SEE WHY it sticks on better to ANY size or shape teat. SEE HOW it takes apart and assembles in an INSTANT—cleans at least 50% quicker. NOTE there are NO threads, NO RINGS, NO nipples! No assembly tools needed. Just 2 pieces—the 1-piece dent-proof "lifetime" shell, the 1-piece rubber inflation. So simple, so sanitary, so practical, so much BETTER that THOUSANDS of dairy farmers use my cups exclusively. But FIRST—every one of those farmers TRIED my cups 30 days on his OWN MILKER BEFORE deciding to KEEP them. I offer you the same unusual MONEY-BACK 30 DAYS MILKING TRIAL. But I ask you first to find out all the facts. Do not send money. Just send the Coupon below! If you have a DeLaval, McCormick-Deering, Sears, Empire, Universal, Conde, Hinman, Perfection, Riteway, or similar standard machine, write or send coupon NOW for complete FREE details. (Style B designed especially for DeLaval.) Please state name of machine.

MAIL COUPON FOR FREE CIRCULAR!

Free Information

Robert E. Maes
D-67 Bear Creek Farm, Marshall, Mich.

Please send me, without any obligation, your FREE CIRCULAR describing your Patented 2-Piece Teat Cup, also details of your Guaranteed Money-Back 30 Day Milking Trial.

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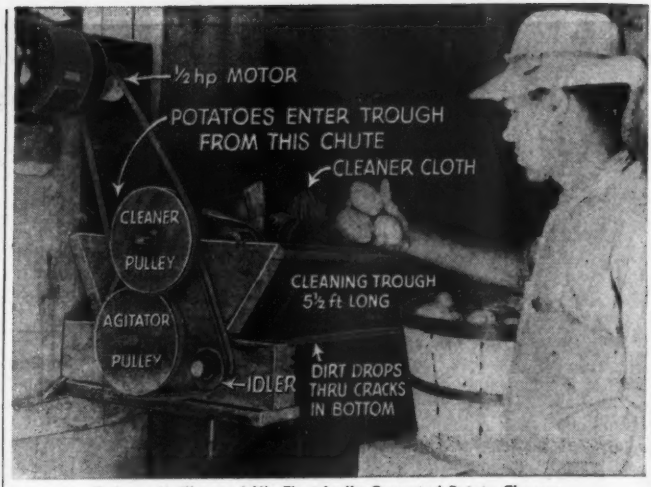


Delmon Mullins and His Electrically Operated Potato Cleaner

Potato Cleaner Gets Market

By L. F. ADDINGTON

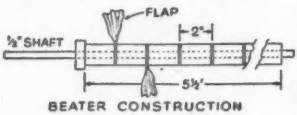
Delmon Mullins, a truck farmer who lives near Wise, Virginia has found how to get his potatoes on the market and sold in advance of other growers. He has learned that buyers in the grocery stores prefer clean potatoes to dirt covered ones. And still the grocers do not like to buy washed potatoes because of the danger of decay.

So Delmon has made his own potato cleaner and drives it with an electric motor. The machine is quite simple and anyone could make his own.

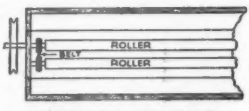
In a slightly sloping 5½′ wood trough are three shafts. Two are on the bottom, and turning slowly, keep the potatoes moving down the trough toward the open end. The third shaft, at the top, has on it a number of thick cloth strips which whip around and lash the dirt from the potatoes. The dirt drops down between the rollers in the bottom of the trough. The potatoes, well cleaned, roll out the end into a sack and are ready for market.

The beater turns at about 800 rpm. The shaft is made of ½″ pipe, 6′ long. Wood spools 2″ long fit snugly over the shaft. Between each spool is clamped a cloth wiper or flap.

The two wood rollers in the bottom turn at about 200 rpm. One drives the other by means



BEATER CONSTRUCTION



LOOKING DOWN INTO TROUGH SHOWING ROLLERS

of a short belt just inside the upper end of the trough.

The cleaner has a capacity of about 40 bushels per hour.

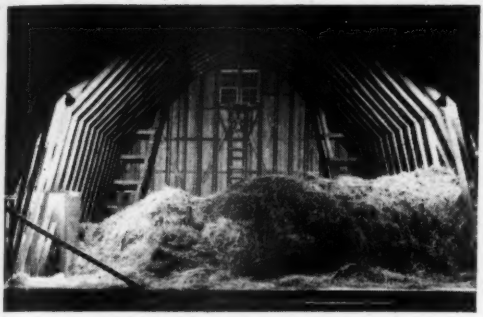
Roadside Stands

Roadside stands that are neat, attractive, and easily reached help sell farm products.

Often stands are set too close to the ground, provide no parking space or cannot be seen far enough to permit safe stopping. Painting a stand improves its appeal, as does a lawn around it. *W. C. Krueger, N. J. Ext. Serv.*

Look at the places G-E LAMPS can help...

make farming more profitable



G-E Reflector lamp

provides effective way to light your haymow. Built-in reflector makes for continued efficiency, good use of light, to speed work, help prevent accidents. (Check your state or local code for installation requirements.) 150-watt reflector lamp...spot or flood **$1.05.**

G-E Projector lamp

helps light your yard at night for easier, safer chore handling... protection against accidents and prowlers. Made of weather-proof "oven" glass; built-in reflector. 150-watt spot or flood . . . . **$1.55.**

G-E Fluorescent lamp

gives you "daylight" night or day to speed work, save time in the kitchen. Put two 40-watts in ceiling fixture; one each, over counters and sink, and get rid of your shadow. 40-watt **$1.**

G-E Germicidal lamp

makes for healthier flocks. Supplies germ-killing ultra-violet to lessen spread of airborne disease. Good in incubators, brooder and laying houses. *Must be used in proper equipment.* Lamp only, 30-watt . . **$6.75.**

G-E 100-watt

Use it in reflector to light your feed room. Makes for easier, faster work. Fills many farm needs. 100-watt **15¢.**

It pays to look for G-E when you buy . . . research is constantly improving General Electric lamps to *Stay Brighter Longer!*

G·E LAMPS

GENERAL ELECTRIC

Stay Brighter Longer!

"It's the Greatest
RITE-WAY
MILKER EVER BUILT!

". . . and I have been using RITE-WAY milkers for 25 years" says F. S. Weber, Mechanicsville, Pa.

THIS SUCCESSFUL dairy farmer has milked five generations of cows with a Rite-Way—using the machine twice a day, every day without missing a single milking.

"I bought one of the first Rite-Way milkers made," he recalls. "I have never touched my vacuum pump with a wrench, and the pulsators have been overhauled only once — 10 years ago.

"I have *always* thought that Rite-Way made the finest, most trouble-free milker on the market. Now, after using the new Silver Anniversary RITE-WAY, I *know* it.

"The new Roto-Matic vacuum pump, with its simple, positive action, and the new dust-proof pulsator, make it head-and-shoulders above anything I have ever seen on the market. I have always felt the Rite-Way was by far the easiest milker to clean. The new self-centering claw makes it *even easier*."

Take a tip from Mr. Weber. *See* the new Rite-Way Silver Anniversary Rite-Way milker. *Compare* it with any other milker at any price. No other milker gives you so much in terms of time-saving, better-milking, money-making features. Remember *more than 100,000* dairy farmers use the Rite-Way milking method.

See your dealer today!

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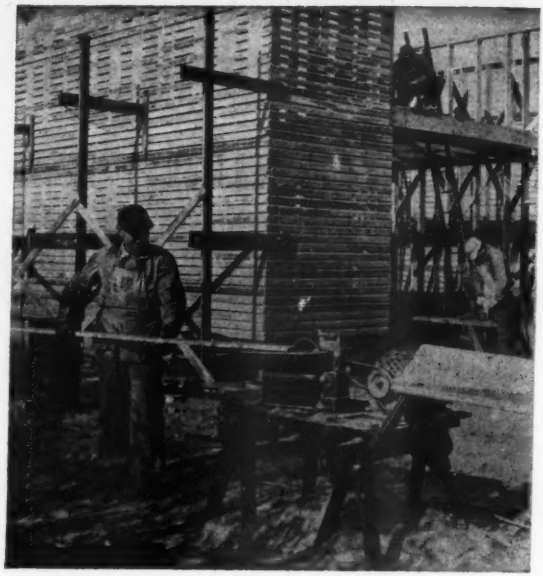
FREE! Write for a copy of the new picture book on the Rite-Way Fast Milking Method!

MORE MILKER FOR LESS MONEY!



Some "Gosh-Awful" Sawing

THE shortage of lumber last year did not keep LeRoy Smith of Walkerton, Indiana, from having a new corn crib—and a good one. He had native hard wood logs sawed for the purpose. That hard wood lumber makes tough sawing and drilling, but he managed nicely with an 8" table saw driven by a 1 hp motor, and an electric drill. "Gosh-awful" sawing; but look at the crib.

The floors and footings of the crib are of poured concrete. Studding is attached to the foundation by means of angle irons and lag screws. That meant a lot of hole drilling, but a sturdy crib.

Every slat used for siding was beveled on both edges. To do it, the saw was tilted and a rack was built at the end of the saw table to guide the boards into the saw.

The crib is 40 ft long, 14 ft high to the eaves and 28 ft wide. There is a 14 ft driveway through the building. The whole job was done by LeRoy, his father Earl V. Smith, shown working at the saw, and a neighbor, Harold Hunke, who is using the drill. The center section overhead will be used for the storage of small grain. The crib will be equipped for the handling of grain electrically

GEO. R. HARRISON

Engineer Asst. Administrator ARA

Dr. R. W. Trullinger, Chief, Office of Experiment Stations, USDA has been named Assistant Administrator of the Agricultural Research Administration. Dr. Trullinger is an agricultural engineer and Past President of the American Society of Agricultural Engineers. For many years he had charge of the engineering phases of research in the Office of Experiment Stations. Then he succeeded Dr. J. T. Jardine, also an engineer, as Director of the Office.

The Office of Experiment Stations has supervision of the Federal funds appropriated for agricultural research in the States. It makes annual inspections of the state experiment stations and approves the projects for which Federal funds are used. The new arrangement will bring the Office into closer contact with the over-all planning of agricultural research in the Department.

No Crowding... THERE'S PLENTY OF ROOM FOR EVERYTHING!

Store a BIG can of milk . . . nearly a bushel of fruits and vegetables . . . a week's supply of meat. Add an abundant store of frozen foods, tall ginger ale bottles complete with stoppers . . . and you'll *still* have more than ample room for staples and leftovers. Part of the magic is in the adjustable shelf arrangement, and simply putting one Humidrawer on top of the other, when you need space for a watermelon, or an over-sized turkey. See this roomy, easy-to-clean, good-looking refrigerator and many other electric appliances at your Westinghouse retailer's now.

Every house needs Westinghouse

Maker of 30 MILLION Electric Home Appliances

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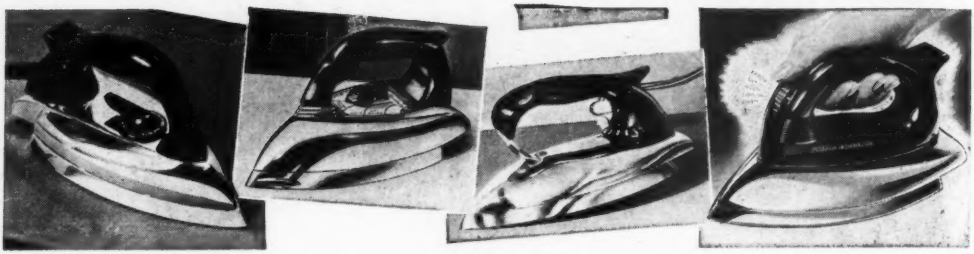
Tune in Ted Malone . . Monday through Friday . . . 11:45 A.M., E.D.T. . . . ABC Network

Electrical Housekeeping

Edited by NAN SHAW



Dial-The-Fabric Irons

TODAY'S fabrics require us to go modren with automatic heat-controlled fabric selectors on all ironing equipment. Wherever we shop to replenish our wearing apparel or household linens, we find new fabrics, finishes and weaves such as we have never used before. We can do no guessing about the correct heat for laundering these new fabrics. Fabrics will give us much more service if we will buy those with labels and then save the labels for instructions on maintenance and care. We will have no disappointments if we re-read and follow labels before the new fabrics are laundered. The new double duty heat selectors have many fabric temperatures to work along with the fast or slow ironer on different fabrics.

Irons today from those well-established manufacturers who proudly put their name and the Underwriters Laboratory Seal on their product, all have high rated efficiency. However, each manufacturer personalizes his iron with features which make varied appeals and mean a lot to persons doing the weekly ironing.

A good automatic iron will give service for a generation if cared for properly. Between ironing days store it in its original packing box.

Give your iron a monthly massage. The recipe is not a secret. Clean the sole with a dampened soft cloth, dipped into a non-abrasive cleaning powder. After this dries, buff off, connect the cord until iron gets warm, disconnect, then rub on beeswax or clean paraffin wax. Wipe dry with a clean soft cloth. After such a massage your iron will glide smoothly over your board. Use circular rather than straight strokes. At times when you find starch stuck to the sole, your iron is terrified if you start working on it with a knife, and it shudders to be pushed over salt. This is because it dreads scars on its smooth surface. It is agreeable to a little fine damp steel wool to loosen the starch. Sticking is reduced if you add some salt to your cooked starch, after you take it from the heat.

An iron sole plate *never goes in for a dip* in water.

If you ever use too hot an iron on some rayon, and it sticks

Much of the ironing can be done with today's electric irons while sitting down. The lady in this picture irons a shirt in 4½ minutes. The iron raises up on legs as shown by pushing a button on the handle.

to the sole plate, use a little nail polish remover.

Keep your iron in mind when you are getting the clothes sorted and dampened for ironing. A cold iron can be ready in 30 seconds for fabrics which call for low temperatures. It will take many minutes to get a very hot iron cooled down for low temperature ironing. Put the garments which take high heat, at the bottom of the basket so they are last to be ironed.

Accessories for Ironing Days

Different size pads to use with ironer or hand iron on puff sleeves, top of pants, embroidery or cut-out work, around lapels, can help you to get a professional appearance to your finished garments.

Keep a tray of straight pins close by to hold taut the shirt front or skirt pleats.

A moistened sponge is a natural first aid treatment for getting dry wrinkles or creases out of the way.

Hangers for wearing apparel will help garments to get a dry seasoning before being stored. They eliminate folding time, too.

A clothes tree, racks, table tops or shelves within your reach save time for the operator. Allow the clothes to get aired and seasoned for storing.

A stool, chair or cart to raise the basket with dampened clothes up to hand level will save many back bends.

If you have square yards of rubber sheeting to enclose a half dozen sprinkled, rolled garments you will find that they keep their moisture more evenly.

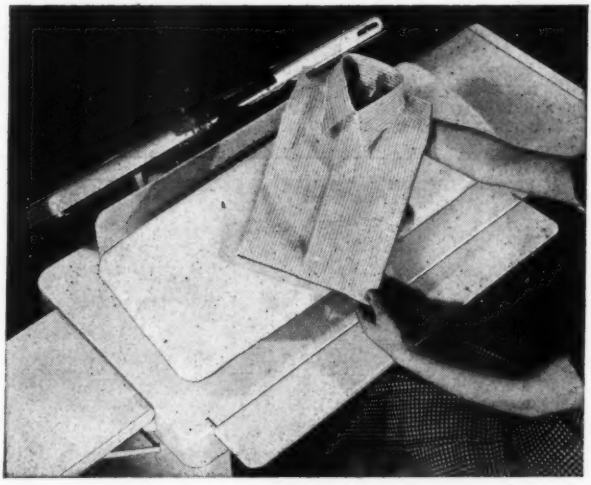
A fine spray attachment for a bottle, will help distribute water lightly and evenly over the garments which will mean faster ironing. In the summer time you might like to use a fine spray to your garden hose attachment, and lightly dampen clothes on the line before folding down into basket.

A fan on the floor helps to keep the air circulating and makes it comfortable for the ironer.

Ironing begins at the clothes line. So have your clothes lines at the height that you can easily reach them. It is then easier to hang and remove clothes so they have the fewest wrinkles.

In buying garments or table linens from now on look to see how the garment is cut. Think how you will place it on your ironer for sit-down ironing.

Read the identification tags or labels which will inform you as to how to care for them in the family laundry. This will extend the life of your investments, also, give easier laundry days and better personal appearance.



General Electric Flatplate Ironer.

Ironer with ironing bench and convenient places to hang and lay clothes.

Safe Pan Holders

A dry pan holder prevents a burn, but a wet holder makes the heat from a hot dish travel to your hand mighty fast. Not only is there danger of a severe burn, but if the hot dish is glass, earthenware or pottery, the wet cloth cools the dish suddenly where it touches and is likely to result in a crack or break.

When high school boys choose food for their school lunches, they consider their health of prime importance. They rate their enjoyment and sociability second, money third, and independence and status last. These are the results of tests in Toronto schools to be used in instructing adolescents toward better nutritional knowledge.

Of all the bottled and packaged foods kept in kitchen cupboards, 95 per cent can be put in a single row on shelves no deeper than 4½ inches where they can be seen at a glance and reached without moving other items.

Men who drive one-handed are headed for church. Some will walk down the aisle – others will be carried.

RED-E-HOT ELECTRIC WATER HEATER

Have plenty of hot water at all times — for only a few cents a day. Always full — can't run dry. 10-gallon heavy gauge copper tank is permanent. Quick-heating 500-watt element, automatically controlled . . . nothing to forget. Thick insulation holds in heat. Splash-proof bowl at easy height for pouring. Write for information.

US

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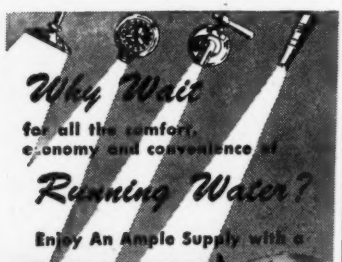
564 Nebraska St. Oshkosh, Wis.



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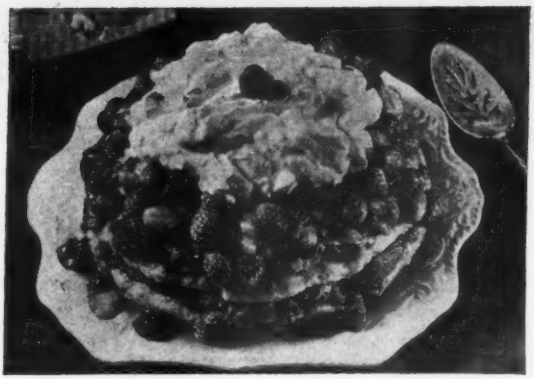
Street.....
City.....State.....



Strawberry Time

Strawberry Shortcake

2 c sifted flour
1 T baking powder
¾ t salt
3 T sugar
4 T lard
2 egg yolks, beaten
½ to 2/3 c milk
Strawberries, sweetened to taste

Sift flour with baking powder, salt and sugar. Cut in lard until mixture has a fine, even crumb. Add beaten egg yolks and enough milk to make a soft dough. Turn onto lightly floured surface and knead gently for one-half minute. Divide into two parts, and roll out each part to fit a 9-inch round layer cake pan. Put one round of dough in pan, brush with melted butter, and place other round of dough on top. Bake in hot oven (450° F) for 12 to 15 minutes. Remove to serving plate. Lift off top layer to put strawberries in the middle and replace. Add berries on top and garnish with whipped cream. To serve, cut in wedges.

Strawberry is the most easily heard of all popular words in the English language, according to tests at Northeastern University. Strawberries are easily eaten, too, especially if they're in dishes as good as these.

Strawberry Custard

2 c milk
4 eggs
6 T sugar
¼ t salt
1 t vanilla extract
1 c cleaned hulled strawberries

Scald the milk in a double boiler. Beat eggs and sugar together slightly in a bowl; add the hot milk slowly to the egg mixture, stirring constantly. Return the custard to double boiler. Cook. Stir constantly. Cook until custard coats the spoon. Remove from heat at once, add salt and vanilla, and cool. Line six custard cups with strawberries and pour custard mixture over them. Top with meringue and serve cold. Serves 6.

Meringue: Beat 1 egg white, adding 3 tablespoons sugar gradually while beating. Continue to beat until egg white forms peaks when beater is lifted from the bowl.

HERE'S QUICK REPAIR "INSURANCE"

A GE FARM WELDER

Copyright 1947, General Electric Company

● With a General Electric Farm Welder in his workshop, the modern farmer becomes increasingly independent when it comes to quick or emergency repairs; he can make them himself, practically "on-the-spot"—and usually do a better, permanent job, without loss of valuable time.

But repairs are not the only thing for which a G-E Farm Welder is useful. With one you can build your own equipment, or modify standard equipment to suit your own requirements, just to mention a couple of outstanding uses.

And it's important to remember that the G-E Farm Welder is designed and built especially for operation on rural power lines—to provide adequate, dependable welding service without interfering with other electric equipment. It conforms to both NEMA and REA requirements.

Stop by your G-E distributor or dealer next time you're in town and inspect a Farm Welder. You'll like the compact design, and the price—as low as $152. *General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC

"My boss keeps me inside the pasture with FIREBALL ELECTRONIC FENCING"

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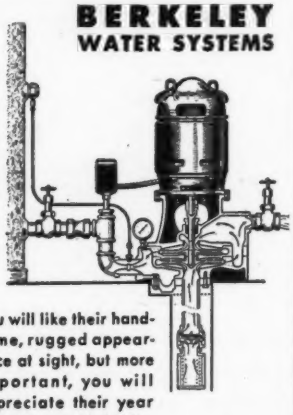
OWNERS HAVE A WORD FOR THEM—

"DEPENDABLE"

BERKELEY WATER SYSTEMS



You will like their handsome, rugged appearance at sight, but more important, you will appreciate their year 'round dependability.

Whatever your water needs or well conditions, your Berkeley dealer will gladly and without obligation estimate on the best installation.

BERKELEY PUMP COMPANY
Dept. A, 556 Tift, S.W., Atlanta, Ga.

Time To Get the Canner Out

For many folks, it's time to get the pressure canners out, because the asparagus and peas are coming in from the gardens.

You will find that the large unit of your range is best to use for foods requiring 15 pounds pressure. The pressure can be kept more constant with fewer heat adjustments. The same is true if you use the smaller unit for cannery loads calling for 5 to 10 pounds pressure. Canning days are so simplified now that there's an electric range for the pressure canner. No more moving canner back and forth for the right heat, with a frequently cracked jar.

It is well to remember that when using a pressure canner or any cooking utensil that extends out over the enamel of the range top, one should be careful not to have water drip on that hot enamel. If it does, the enamel may develop those brown cracks of crazing or it may chip. Have the outside of the canner wiped dry from spilled water or condensation before placing it over the unit. Temper the cold water you put in it so the outside will not sweat.

Another precaution worth using on cannnig days is an asbestos collar to fit around the outside of the heat unit. Keep it stored with your pressure canner so that it's always there when you want to can. Use it under any over-size, heavy piece of cooking equipment whether a canner, boiling water bath, or chicken fryer. One manufacturer on his new ranges is offering a unit raiser-upper for use with canning equipment.

Remember that any discoloration or drippings will come off easily, if you wait until the range is absolutely cool. Usually by the time your cleaning up is done at the end of the day, your range will be ready for cleaning with a soft cloth, soap and water.

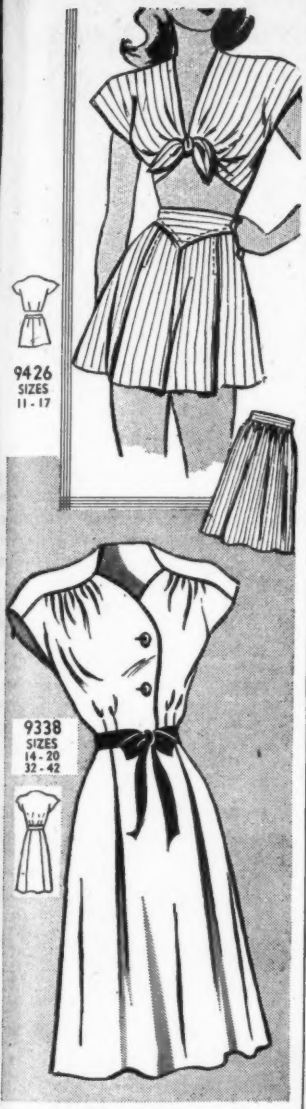
Avoid pulling or pushing your loaded canner across the range by bringing your equipment and supplies close to the range for packing and sealing jars and loading canner. Pushing metal on your porcelain enamel range top will put scratches in the surface.

Cellophane Hat Protectors

Salvage the narrow and short pieces of cellophane wrapping paper. One use they can be put to is to prevent perspiration stains from appearing on felt hats or hat ribbons.

Cut a strip a little narrower than the width of the inside hatband, carefully tucking underneath. Usually for adults the cellophane stays in place. For children's hats, or when using short overlapping pieces, it is wise to use long bastings.

NATIONAL FARM SAFETY WEEK
July 20-26



Patterned for You

9426—This three piece sun-outfit can be made in no time at all. Has little boy shorts and dirndl skirt. Sizes 11-17. Size 13, bra, shorts, 2⅛ yds. 35 in.; skirt, 1⅝ yds.

9338—A figure flatterer! No shoulder seams and no sleeves to set in. Sizes 14-20; 32-42. Size 16 takes 2½ yards of 39 inch material.

Price of each pattern is 25 CENTS (in coins).

Send orders to: ELECTRICITY ON THE FARM, Pattern Department, Box 196, 243 West 17th Street, New York 11, N. Y. FIFTEEN CENTS more for the new Summer Pattern Book with a free pattern printed right in the book.

FOR BETTER FARM INCOMES and BETTER FARM LIVING

NEW DE LAVAL PRODUCTS

New De Laval Magnetic *Speedway* Milker

De Laval engineered for still better, faster, cleaner De Laval milking. New stainless steel unit . . . new Pulso-Pump with metered lubrication . . . and other new features.

New De Laval Sterling Milker

Another new postwar De Laval Milker for still better milking performance. New from stainless steel units to pump. Compare it with other pneumatic pulsator type milkers!

New De Laval Portable Milker

The new De Laval Milker of many profitable uses! Streamlined and handy—single or double Sterling units. Can be converted to pipe line milker when and if desired. Try it.

New De Laval World's Standard Series Separators

The cleanest skimming, easiest-to-clean separators ever built. Every part milk touches is stainless steel — bowls, supply cans and covers with open discharge type spouts. Three sizes.

De Laval Junior Separators

Ideal for the smaller herd owner. Provide De Laval clean skimming and easy cleaning at lowest cost. Produce highest quality butterfat. Four sizes.

New De Laval *Speedway* Water Heater

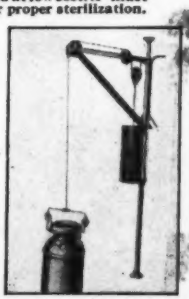
De Laval engineered for the dairyman. Supplies 12 full gallons of 185° water safely, dependably and at low cost. A "must" for proper sterilization.

New De Laval *Speedway* Milking Truck

Complete with strip cup and four pails for hot water, clean udder towels, chlorine solution and used towels for most effective use of fast milking routine. Helps systematize your milking operation.

New De Laval *Speedway* Food Freezers

For better food preservation and better farm living. Beautiful in appearance—dependable and economical in operation. Two sizes—16½ cu. ft. (illustrated) and 35 cu. ft. Great new products with a famous old name you know well!



New De Laval *Speedway* Vacuum Can Hoist

Takes the work out of loading and unloading the milk cooler. Operates on 15 inches of vacuum supplied by milker pump.

De Laval

DE LAVAL SPEEDWAY

165 Broadway New York 6 • 427 Randolph Street Chicago 6 • 61 Beale Street San Francisco 19

Aluminum Foil Wrapping

Ideal for farm refrigerators and freezers is this aluminum foil for wrapping fresh foods. It seals the moisture in, and keeps air and light out.

You can reduce your shopping trips for fresh foods because foil wrapping keeps foods crisp and fresh longer. Foods don't absorb odors because the metal wrapper is not porous nor absorbent. The foil can be washed and used over until it tears.

By lining the broiler or roaster pan with a sheet of foil, dishwashing is simplified.

For freezer use, there is a heavier weight foil in rolls 18 inches wide and 75 feet long. The regular weight wrapper is on 12 inch width rolls in lengths of 25 feet.

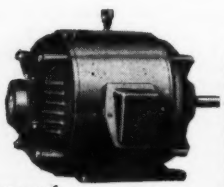
Vacuum Your Wool Clothing

Woolens that have weathered the winter are ready for summer storage.

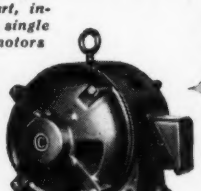
Before storing, wool clothing should be thoroughly cleaned. "Mothproof" containers are useless unless the garment is clean and free of moth larvae. Dry cleaning is best for most wool garments, but some knit garments, flannels and challies wash well. Holes or snags should be mended before cleaning to prevent them from enlarging. To further eliminate the danger of moth larvae lurking in the clothing, give them a thorough brushing, airing and sunning before packing away. The vacuum cleaner attachment is just the thing to clean pockets, deep seams, and other dust traps.

Several sheets of newspaper completely sealed with gummed tape, or special "moth-proof" containers, serve well for insect-tight storage. However, they must be tightly sealed to be effective.

For added protection, flakes of naphthalene, paradichlorobenzene or moth balls might be used in the storage container. A pound for a small chest or 3 pounds for an average closet should be sufficient. The flakes or balls, which give off a gas the larvae dislike, should be placed high in the closet. The gas is heavier than air and sinks.



Century repulsion start, induction single phase motors



Century squirrel cage 3 phase motors

Century capacitor single phase motors

At the Snap of a Switch -

A CENTURY Farm Motor Is Always Ready to Save You Time and Labor

On many farm jobs a Century motor can eliminate the need for a hired hand—and some jobs cannot be done as conveniently or cheaply as with electric power.

You can save time and labor by using Century motor driven equipment to prepare feed for stock, dry hay, pump water automatically, etc.

Dependable Century motors are built for all farm applications. See your dealer or write direct for information.

542

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Offices and Stock Points in Principal Cities

Century C MOTORS

Secret of Egg Cookery

The secret of success in cooking eggs is to use low or moderate, even heat. The uniform heat of an electric range is the answer. That way eggs will be tender when done, not tough and leathery as when cooked at a high heat. At high heat, too, the egg and milk mixtures are likely to curdle.

Eggs Baked in Potato Cups. Shape leftover, seasoned mashed potatoes into balls—6 balls to 2 cups potatoes. Place on a greased baking sheet. Press the center of each ball with a spoon or with the bottom of a small water glass to form a cup. Drop an egg into each cup. Season with salt and pepper. Bake in a slow oven (325° F) for 20 minutes, or until the egg is as firm as desired.

Eggs for cake making, do best when they've had a chance to reach room temperature. Also the whites whip more quickly and to a greater volume when at room temperature. As for the yolks for mayonnaise, they perform better when cold—just out of the refrigerator.

Raw eggs separate most easily into whites and yolks if taken out of the refrigerator about ½ hour before they are to be separated.

Kale Challenges Carrots

Carrots, which have long been given the nod by athletes, aviators and other people, for their vitamin A (better eyesight) value, have a challenger.

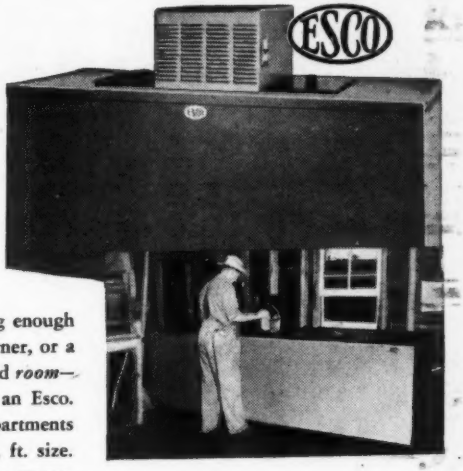
Kale, a new-comer to many family tables, is the so-called dark horse in the vitamin field. The dark-green, leafy vegetable of the greens family puts up strong competition for carrots, not because it contains more

ESCO EMPIRE

"For a better life on your farm"

SAYS ICICLE IKE—

"When you get your freezer, get one that gives you 5 to 6 cubic feet for each member of the family. Get an Esco!"



A farm freezer that isn't big enough is like a range with one burner, or a single bed for two. You need *room*—and that's what you get in an Esco. Big, *big* zero storage compartments . . . in the 16, 24 or 40 cu. ft. size. PLUS a separate freezing compartment with air-blast fan that freezes *3 times faster* than in still air. Freezes the flavor in.

Count on Esco. Fine construction. Trouble-free operation. Economy! No finer freezer is built.

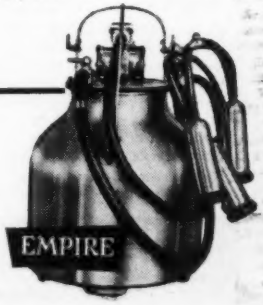
You'll enjoy fresh meat and game all year 'round . . . strawberries and vegetables *out of season* . . . with an Esco. And you'll have the trip-saving convenience of "locker facilities" right at home. Write for information to: *Esco Cabinet Co., West Chester, Pa.*, specialists in farm refrigeration equipment for more than 20 years.

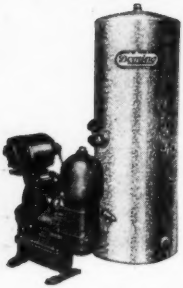
"Insure your milk check with an Esco Cooler"

Cools milk to below 50°—fast, with icy water circulating above milk level in every can! Keeps bacteria count *down*. Keeps your reputation *up*. Write for full information: *Esco Cabinet Co., West Chester, Pa.*

"Suiting the cow suits you, too!"

Yes, *you* get best results when the *cow* is suited! And no other milker can match Empire's patented teat-cups, duplicating the natural sucking action of the calf. Famous for 40 years. Write for booklet. *Empire Milking Machine Co., Div. of Esco Cabinet Co., West Chester, Pa.*





All types of Shallow Well Systems

Remember this fact: A pump is the *heart* of a water system. Make the *heart* of YOUR farm water system a strong, dependable, long-lasting DEMING PUMP! Be sure to select the *right* type of *adequate* capacity for your well and for your peak load needs. With the *right* pump as a *heart* of the water system, you can expand the system to meet new needs *at least cost*. Remember that DEMING makes the most COMPLETE line of pumps and water systems which makes it possible for your Deming Dealer to meet YOUR needs *exactly!* If you don't know the location of the nearest Deming Dealer, *ask us.*

All types of Deep Well Systems

YOU NEED THIS FREE GUIDE!

This 48-page illustrated guide contains important information you need to know to protect your investment in an electric water system. *Write for FREE copy NOW!*

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Eagle **ELECTRIC BARN CLEANER**

Clean your barn with a push of a button—save over 400 hours a year in time and labor—increase your herd without need for extra hired help! Improve sanitation!

The Eagle Electric Barn Cleaner cleans barns in 1/10th the time it takes by pitchfork method at a cost of only 1¢ to 2¢ electric current a day — does it better!

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A Division of the Four Wheel Drive Auto Company

vitamin A than the yellow vegetable but because what it does have is better used by the body. That is what chemists of the U. S. Department of Agriculture have determined after careful laboratory tests.

Nutrition specialists of the Department say that kale cookery is simple. It's just a matter of placing the leafy vegetable in enough boiling, salted water to prevent sticking, and only long enough to make the leaves tender. "Panning," that is steaming kale in a little melted fat in a flat, covered pan until it's tender, is also suggested.

Heat and long cooking won't affect kale, the nutritionists say, but they advise using the short cooking time and a minimum of water in order that the vitamin C, calcium and iron of kale may be safeguarded.

The bronzed or brownish appearance of some kale means that it went through some cold weather during its growing period. The flavor and vitamin value aren't changed a bit.

How to Avoid Lightning

Banish fears of death by lightning this summer by concentrating on the fact that your chances of being a lightning victim are 365,000 to one. One hundred times better than the chances of being an auto accident fatality, say students of lightning phenomena. Research by the electrical industry on protective devices such as circuit breakers and arresters has led to a few tips on how to raise your chances above 365,000. Shun poles, masts, water tanks, isolated trees and similar upright objects during a storm. Steel-topped buses, trains and automobiles are safe places. One engineer demonstrated this by sitting in a sedan while three million-volt manmade lightning crashed against the roof of the car and streaked harmlessly off.

Tomatoes and sweet corn are the most popular canned vegetables on the grocer's shelves.

Definition of a gentleman: a wolf with patience.

AC and DC Welders

Welder Series, Article 8

MOST welders now sold for farm use are alternating-current welders. Many of the welders used in industry—factories, construction jobs, garages, etc.—are direct current welders.

In construction, the alternating current welder is a transformer that changes 230 volt line current to a lower voltage (80 to 40 volts) safe and suitable for welding and to higher amperage to produce more heat.

The direct current welder is a rotating, variable voltage generator that furnishes electricity at voltages and amperages that are suitable for welding. The generator is designed so that short circuits in striking the arc will not injure it. Direct current welders may be driven by tractors, gas engines or electric motors.

Certain regulations about the size and capacity of welders have been set up by power suppliers for farm lines. These apply to alternating current or transformer type welders. Direct current welders driven by motors may, in general, be used like any other motor of equal power on farm lines. Motor rules instead of welder rules apply.

Early books on welding dealt primarily with dc welding. A great variety of rods are used, including plain rods without coatings. For certain special industrial jobs the dc welder has advantages. The polarity of the current may be reversed which is helpful for some types of jobs. On the other hand it has the disadvantage of "arc blow", a magnetic sidewise blowing of the arc not present in ac welding. Formerly it was also easier to strike and hold an arc with a dc welder. This advantage has now been largely overcome by the development of shielded arc welding, using coated rods. For general purpose welding, with the excellent rods now available and the new ones being constantly developed, ac welders are fast replacing dc. Another reason for the popularity of the ac types is the lower cost and lighter weight for the same capacity.

ICEY says . . . "Pick luscious fru'ts and vegetables **this** summer and enjoy them **next** winter . . . from a Victor Products QUICKFREEZE Refrigerator. Ruggedly constructed, thriftily operated, a Victor Products QUICKFREEZE will give you tastier pickin's all year 'round at **lower** cost." Rectangular construction lets you use **all** the space. Separate freezing and storage compartments. Three models from 10 to 26 cubic feet.

Victor Products Corporation's 30 years of leadership in manufacturing farm refrigeration equipment is **your** guarantee of quality products.

engineered refrigeration

White baked enamel finish • Convenient temperature control • Welded steel construction • 5" insulation in walls and bottom, 2" in "easy lift" lids • Seamless copper coils 100% bonded to liner

Mail coupon **today**, no obligation, get details and name of your nearest Victor Products dealer.

Victor Products Corporation
Hagerstown, Maryland Dept. EF-7

I am interested in a Victor Products QUICK-FREEZE. Please send me full information and name of my nearest Victor Products dealer.

Name .....
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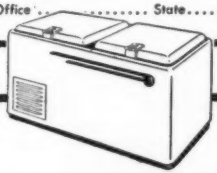

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HAGERSTOWN MARYLAND

HERE'S A PRACTICAL BUY for FARM DRILLING

Look at These Features!

- Universal Motor—uses house current.
- Strong, light aluminum die castings.
- Comfortable, hand-fitting shape.
- Compact, close-coupled for close-corner work.
- Instant-release Trigger Switch.
- Fast-operating Jacobs Chuck.
- Powerful—Sturdy—A quality tool throughout.

LOOK AT THIS PRICE!

$18.95

¼ inch (Capacity in steel) HOME-UTILITY Portable Electric Drill

Look at These Uses!

Drives twist drills up to ¼"; counter-sinks, wood drills, wire brushes, abrasive pads and sleeves. Saves hours in repairing trucks, tractors, implements, dairy and poultry machinery, tools, harness. Helps build and repair furniture, install hardware and fixtures, repair electrical, heating and plumbing appliances. **Ask your hardware dealer for details.**

$11.45

¼ inch HOME-UTILITY Bench Stand Only

ELECTRIC HOME-UTILITY TOOLS

A Product of Black & Decker

Farm Accidents

Based on prewar records the *farm accident toll* in the United States is one death every 28 minutes and one farm person injured every 18 seconds. If it has not been you or your family, you are to be congratulated. It might be you tomorrow, however, if you do not continue to exercise care.

Many farm accidents could be prevented if safety measures were discussed by the farm family. Consider such things as safety guards on tractor take-offs, boxes, etc. on dark stairs, children riding on farm machinery, hay chutes, defective chimneys. Include the hired help and the children in the discussions.

Dr. H. Herman Young of Mayo Clinic lists the accidents to farm people treated at the Clinic from 1935 to 1943. It will give you a good idea of where the accident possibilities are on your farm. The list does not include automobile accidents. They are second only to home accidents.

Farm Accidents
Treated at Mayo Clinic 1935-43

Falls—193	
Agency	No.
Farm equipment	42
Hay mow	20
Buildings	16
Stairs	16
Horses	15
Ice	13
Ladders	13
Scaffolds	12
Trees	8
Miscellaneous	39

Machinery—186	
Agency	No.
Tractor	34
Corn picker	29
Corn shredder	24
Run over by machinery	20
Buzz saw	16
Threshing machine	9
Grain elevator	8
Feed mill	7
Combine	7
Corn binder	6
Gas engine	6
Mower	6
Rope and pulley	6
Grain binder	4
Miscellaneous	4

Livestock—104	
Agency	No.
Horses	45
Runaways	21
Bull, steers	17
Cows	15
Pigs	5
Sheep	1

Miscellaneous—92	
Agency	No.
Cut by axe	13
Falling tree	13
Burns	15
Unclassified	51

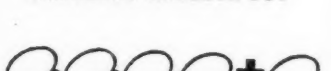
It is both cheaper and less painful physically and mentally to prevent accidents than to regret them.

TRUMBULL (T) ELECTRIC

POULTRY WATER WARMER

LIST PRICE $4.00

ROUND THE CLOCK
DRINKING WATER AT 50°F



GET FIVE EGGS INSTEAD OF FOUR
EVEN IN ZERO WEATHER

THE TRUMBULL ELECTRIC MFG. CO. PLAINVILLE, CONNECTICUT

ADEQUATE WIRING
SERVES AND SAVES
KEY TO SATISFACTORY RURAL SERVICE

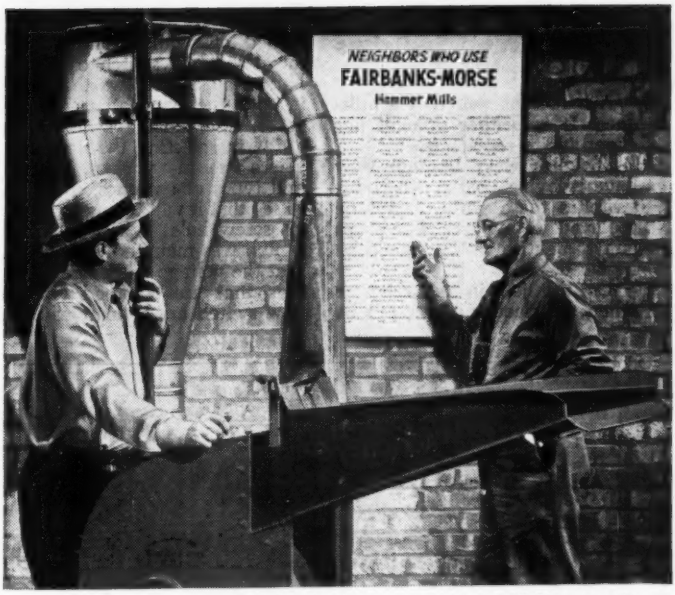
WANTED—
Assistant Editor

ELECTRICITY ON THE FARM needs an assistant editor. His first qualification must be a liking for farming and farm people. Next, a desire to devote himself to helping farm people to live better and earn more. We prefer a young man who grew up on a farm and who has an electrical engineering degree. We have some tough electrical questions to answer at times. If he is handy at building and repairing things, that will help him to help others. Some experience with a utility or college or in extension or vocational agriculture work is desirable. His duties, after a get acquainted period, will be to handle our important questions and answers department, read proof, do some writing and editing for the magazine, our Dealer Edition and our News & Previews and share with the others of us in the general planning, editing and contact work. He must be a good man, for we expect to continue to put out a good magazine. Salary in line with ability. Write the Editor.

Lightning and Metal Roofs

"Geo: Your April issue, page 24 may be taken to mean that you ground a metal roof from the ridge. That's bad. Got to catch the lowest edge at the corner." That's Jack Haswell, Pennsylvania Extension Agricultural Engineer speaking. Jack has made a specialty of lightning protection for years. He adds "Small buildings, not over 80 ft. long need only two diagonally opposite corners grounded. Larger ones, all four corners and possibly some grounds in between. The grounding conductor or pipe should be securely bolted to the roof and the ground rods driven 8 or 10 ft. into the soil. A lightning rod system is no better than its grounds. Be sure all connections are tight and that the ground rod is in moist soil. If ventilators or chimneys project above the roof they should be rodded and connected to the metal roof or grounding conductor. The hay track should also be tied in to the grounding system."

—I'm proud I am a farmer!—



Dealer E. M. Brubaker shows a prospect his list of 73 hammer mill users

Farmers everywhere say it's true

Yes, users throughout the U.S.A. find that Fairbanks-Morse Hammer Mills excel in saving time, labor, and power cost in grinding grains and roughages.

These mills grind fast because their serrated hammer tips are unusually efficient, and because their breaker plates and screens are large. Most of the feed is ground the first time around, and so passes out of the mill sooner. This increases capacity and saves your power as well as your time.

Large-diameter cylinders add to power savings by giving the necessary hammer tip speed at only 2,400 r.p.m. This permits driving with a 4- or 5-inch pulley, more efficient than the smaller pulleys needed with smaller cylinders.

There's a model to match your tractor. A smaller mill would waste tractor fuel. A larger mill would be underpowered . . . give you less capacity than you paid for. To get the *right* mill, see your Fairbanks-Morse dealer, or write Fairbanks, Morse & Co., Chicago 5, Illinois.

Fairbanks-Morse

A name worth remembering

Water Systems • Sump Pumps
Hammer Mills • "Z" Engines
Washers • Ironers • Windmills
Pump Jacks • Corn Shellers
Light Plants • Water Heaters

Replace Wall Switches

By K. B. SEBERT

A bad light switch is a nuisance. It is neither difficult nor expensive to replace it.

Switches wear because they have moving parts. In most switches these parts cannot be replaced. If one breaks or burns out, the entire switch should be replaced.

Do the job in the daytime when the electric power can be turned off while working. Remove the bad switch carefully. Notice all the screws that hold it, and the connections of the wires. Use the old switch as a guide in selecting the new one. There are many sizes, shapes, and types of switches, so check to see that it will fit any brackets or screw holes where the old switch was mounted. Be certain that the voltage and current ratings that are stamped on the new switch are at least as high as those on the old one.

Then install the new switch in the reverse way in which you removed the old ones. Clean the ends of the wires and trim back frayed insulation. Twist stranded wires and wrap them around the connection screw in the same direction in which the screw turns to tighten.

Slick Trick

When an electric light bulb breaks off in the socket, try this method to remove the metal base: push a cork into the broken base and turn it with the base, after switching the electricity off. The cork will protect the hand against cutting as well as against possible shock. H. J. MILLER.

—I'm proud I am a farmer!—

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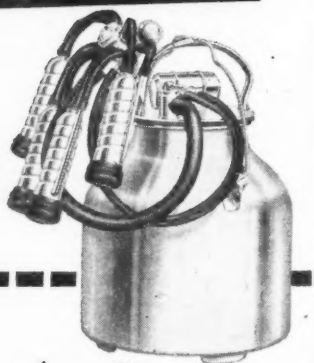
THE NEW *Perfection* MILK-MASTER with VARI-MATIC *Milking*



Here's everything you've wanted in a milker . . . fast milking, easy operation, with a degree of milking comfort possible only with Vari-Matic Milking. The Vari-Matic "mechanical brain" adjusts vacuum automatically to the need of each teat for fast, thorough milking *with the least possible vacuum.*

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WRITE FOR CATALOG

Way Ahead DESIGN

- Vari-Matic Milking
- Duo-Jet Vacuum Release
- Milking Rhythm Pulsator
- Weighted, Balanced Claw
- Pull-More Inflations
- Easy-Grip Handle
- Vis-A-Flow Dome
- Double Action Milking
- Helix-Rib Teat Cup Shells
- Super-Size Milk Passages
- Rigid Claw Hook-On
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CLEAN YOUR MILKER *FASTER* with VEL
ELIMINATES MILKSTONE, LOWERS BACTERIA COUNT, CUTS CLEANING TIME

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UNCONDITIONALLY GUARANTEED FOR 1 YEAR
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Comes complete with floating motor mount—miter gauge with adjustable stop—aluminum guard—soft aluminum insert—spring steel splitter—heavy gray iron fence—(no motor—no blade). Table 12" x 14". Cuts thru 2 5/16". Tilts to 45°—Oilite bearings. Shipping weight 50 lbs.

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HOL-DEM ELECTRIC FENCE

MODEL 65—Operates off 110 AC 60 Cycle or 6 Volt Dry or Storage Battery. Priced $9.95 and up.

Famous HOL-DEM electric fence controllers can be shipped from stock. Fastest selling controllers on the market. All types for all purposes. Low cost. Self-contained.

Good Dealer and Jobber Proposition

Write, wire or call your order in today. Catalog and prices sent on request.

ELECTRIC SERVICE SYSTEMS, INC.
1330 Quincy N.E., Minneapolis 13, Minn.

A woman looks at a secret JUST two ways: EITHER it's not WORTH keeping, or it's TOO GOOD to keep. . . . GIRLS: if you DON'T get married in the SPRING, look around for a FALL GUY. . . . Fred Allen's definition of a DOUGHNUT: a FRIED HALO. . . . HONEYMOON: the morning after the KNOT before . . . . RIDDLE of the MONTH: What's a METAPHOR? ANSWER: to keep COWS in, of course! (Caw! Caw!). . . . PARSON: "Hell is full of COCKTAILS, HIGHBALLS, SHORT SKIRTS and TWO PIECE BATHING SUITS." Voice from the gallery: "OH DEATH, WHERE is thy sting?"

. . . . DOLLAR: the JACK of ALL TRADES. . . . EVER stop to think of THIS?—A SINGLE artist may be NOTHING in particular, but TWO artists are a PAIR of DRAWERS. . . . Engineers have developed sound equipment that will throw a speaker's voice over a mile—now if they could JUST develop something that will throw the speaker TWICE that far—? . . . . PROFESSOR: "Name TWO ancient SPORTS." STUPE STUDE: "ANTHONY and CLEOPATRA." ! . . .

JINGLE-JOLLY Dept.: "To live on the FIRST floor, OFTEN spells disaster — WHEN SECOND floor JITTERBUGS crown you with PLASTER." . . . . Many a married couple is like a team of horses—separated by a tongue. . . . A WISE woman makes her husband THINK he's the HEAD of the HOUSE when he's ONLY chairman of the ENTERTAINMENT committee. . . .

NIGHT CLUB: a place that knows the relation between GAUZE and EFFECT. . . . The English language IS a little confusing. For example, if a FORTIFICATION is a LARGE FORT, shouldn't a RATIFICATION be a LARGE RAT? . . . .

TOO much lipstick is UNREFINED; it leaves a bad taste in one's mouth. . . . SNICKER-SCOOP of the month: The meek little steno approached the boss nervously, coughed expectantly and squeaked: "Please, sir, may I have the day off to get married?" "WHAT!" roared the boss, "you JUST had a vacation! WHY didn't you get married THEN?" "Oh, I don't know," replied the meek little steno, "but I SOMEHOW just didn't want to spoil my vacation." Seeya next month. . . . Your pun-peddler—DUFFY.

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HOME FREEZER

... the Key to Better Living

A new venture in Better Living is yours with a Marquette Home Freezer. It ends all canning work and worries . . . saves time in the kitchen . . . saves money by buying in large quantities when prices are low. You can prepare and freeze complete meals for harvest crews weeks in advance. Enjoy more tempting and more economical meals from your Marquette Home Freezer all year 'round.

Four models from four to sixteen cubic feet. Triple-Sealed doors for most efficient operation. Marquette Home Freezers are designed for *Fast Freezing* as well as Storage. For Complete Satisfaction, *INSIST on a Marquette!* See your dealer Today or write for free folder.

MARQUETTE APPLIANCES, Inc. (Dept. 2) Minneapolis 14, Minn.

MARQUETTE
Home Freezers

AMAZING NEW FARM TOOL!

YOU'LL find scores of time and labor-saving uses for the Tokheim Air Compressor—inflating tires, greasing car, tractor or equipment; spraying paint, insecticides, rust preventives; cleaning radiators, motors and machinery—dusting. Portable—easily carried anywhere! Just plug into electric outlet and it's ready to use. Moderately priced! Strong welded pressed steel construction. General Products Division, Tokheim Oil Tank & Pump Co., Fort Wayne 1, Indiana.

GREASES
PAINTS
SPRAYS
INFLATES TIRES
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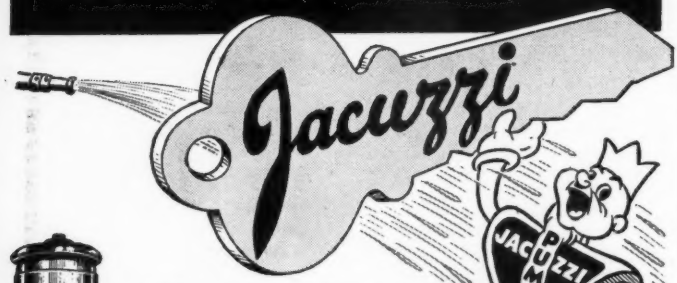
QUALITY TOKHEIM FARM EQUIPMENT

SEE YOUR IMPLEMENT DEALER OR WRITE FACTORY

The "KEY" to "AUTOMATIC WATER"



Like a magic key *Jacuzzi*—"two pumps in one"—unlocks the water beneath the earth and makes it available at the turn of the tap. First the Injector makes your well "artesian" by bringing the water from the depths to the surface... no moving parts below ground. Then the Centrifugal Impeller picks it up and forces it under pressure to where you want it. "Automatic Water" by *Jacuzzi*... your best buy in pumps.

FREE

Write for illustrated Folder and *name of your local Jacuzzi Dealer*

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Originators of Injector Pumps

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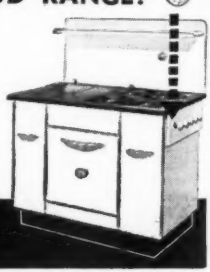
LOOK!..an OVEN CONTROL
ON A COMBINATION COAL-WOOD RANGE!

When you keep a coal fire for kitchen comfort, the oven is heated in the usual manner. But if the fire is not hot enough for baking, you turn on the electric oven unit to raise the temperature. The automatic control is then in full charge. You'll never have a baking failure. Cooking top is also half coal-wood, half electricity. See your Monarch dealer, or write.

MALLEABLE IRON RANGE CO., 147 Lake St., Beaver Dam, Wis.



Monarch "duo-oven"
COMBINATION COAL-WOOD-ELECTRIC RANGE

Questions and Answers

Udder Massage Heater

▶**Question:** *I wash my cows with hot water from the electric water heater, but as I pour about a quart in a wash basin separately, by the time I milk 8 or 10 cows the water gets cooler than I like it. I don't like to take time to go back to the milkroom to get another pail of water. Is there any water warmer similar to the poultry water warmer that a person could drop in a pail that will hold the water at 135°?*

A. G. K., Neb.

▶**Answer:** Yes, there is a heater made like the poultry water warmer to keep water at 135° in a pail for washing cows. Write to Trumbull Electric Mfg. Company, Plainville, Conn.

Mosquito Repellent

▶**Question:** *On page 28 of your June and July magazine you have a write-up about Aerosol bombs. I would like to know if this bomb may be sprayed on a person. We are irrigating at night, and the mosquitoes drive me nuts. Could I use something to spray on myself without any danger?*

A. C. K., Nebr.

▶**Answer:** Those Aerosol bombs contain DDT and pyrethrum. They would not be injurious to you if you did not inhale a lot of the fumes or swallow any of the liquid. These poisons kill flies and mosquitoes but do not repel them. You might kill the mosquitoes but in doing so they would also take a bite out of you.

What would be better for you is a repellent. A supposedly good one was developed by the New Jersey Experiment Station during the war. It is called 6-12. It is an odorless oil that you rub on your skin; sporting goods stores and some service stations sell it.

Pasteurizer Manufacturers

▶**Question:** *I wonder if you could tell me the names of firms making modern pasteurizers for farm use. Am interested in perhaps a little better pasteurizer than the average as I wish one with a refrigerating unit with it so as to not only heat the milk but to properly cool it back to room temperature quickly. If you can assist me with the names*

of firms who make these, it will be very helpful. F. G. S., Ill.

▶**Answer:** Milk pasteurizers of all types and sizes from about 20 gallons up are made by the following companies, all located in Chicago.

Cherry-Burrell Corp., 427 W. Randolph.

Creamery Package Mfg. Corp., 1251 W. Washington Blvd.

Mojornier Bros. Co., 4601 West Ohio.

If these companies do not manufacture their own refrigeration equipment, I am quite sure the first two handle complete installations of the type you refer to.

Insulation Tester

▶**Question:** *Could you please tell me what kind of equipment is used to check electric wires for poor covering and spots that might be close to short circuit in hidden places?* LaV. W., Minn.

▶**Answer:** The James G. Biddle Company, 1211-13 Arch Street, Philadelphia 7, Pa., has resumed the manufacture of insulation testers known as "Meggers." They have published a little booklet entitled, "An A-B-C of Insulation Testing" which gives some information about different uses for this machine. It is a little portable hand cranked generator and ohm meter which can be used in a variety of ways. For instance, in testing the leakage between an electric wire and an enclosing conduit.

Leaking Milk Cooler

▶**Question:** *The water tank on my electric milk cooler is leaking. Would merely soldering the hole be a proper repair or should the cabinet be taken apart and the insulating material and surface of metal be thoroughly dried in order to insure efficient insulation and full life of cabinet?*

L. G. C., Ind.

▶**Answer:** The proper procedure for repairing your milk cooler will depend somewhat on its construction. If the cooler has a tight outer as well as inner metal tank and inner tank leaks, it would certainly be desirable to remove the inner tank and dry the insulation as well as to repair the leak. Wet insulating material has little insulating value and if the outer tank is tight there would be no chance for the water to drain away and the insulation to dry out. Whether this can be done will again depend upon the construction of the tank, that is, whether it is welded so the tank cannot be separated without wrecking it.

The best thing to do is to keep milk tanks from leaking by cleaning them frequently and painting

Now, spraying cows takes half the time—and no real work at all! Now, all you need do is fill the 3-quart container of the Hudson Rival "Lektrik-Spray" . . . flip a switch . . . walk from cow to cow . . . while this electric sprayer throws out a spray that kills flies faster, more effectively. The "Lektrik-Spray" saves so much time and is so easy to use that you'll spray oftener and more thoroughly. That means better protection from flies . . . a better-producing herd. See your Hudson dealer, *or write for "Lektrik-Spray" folder.*

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589 E. Illinois St., Chicago 11, Illinois

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Tested and Proved
SPRAYERS AND DUSTERS
HAY TOOLS AND BARN EQUIPMENT
LIVESTOCK EQUIPMENT
FARM VENTILATION EQUIPMENT
POULTRY EQUIPMENT

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USE THE "LEKTRIK-SPRAY" EVERYWHERE

Before Cows Come In, have a fly-free barn—set time switch and let sprayer run.

As Cows Leave Barn, give them an "after-milking" spray to send them out protected.

Prevent Disease— Kill mites, lice, germs in poultry, hog houses —all farm buildings.

frost-proof HYDRANT

HANDY WATER for STOCK and FIRE PROTECTION

Galvanized iron top body and standpipe, brass lower body and working parts, lead waste included. Inlet connection for ¾" iron pipe, outlet for ¾" hose coupling. Order sizes to depth of frost where installed. For 3-ft. burial, order 5-ft. size.

5 ft. $9.50
6 ft. 10.50
7 ft. 11.50
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ELIMINATE WATER HAMMER
IXL AIR CUSHIONED ELIMINATOR
Price $3.25 Plus shipping charges.

If you have a water-hammer condition, install this eliminator before damage is done. Bottom tapped ½" iron pipe size for hot or cold water lines.

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No installations with the Globe Plug-in Milker..

Plug into any electric outlet and MILK. No pipe lines to plug up or freeze up. No tanks or tracks. With your Globe "Grand Champion" you have EVERYTHING in one light, compact, hand-portable unit (with *motor, pump, pulsator right on top of the pail*).

And Globe gives you 12 Plus Features for Better Milking, including . . . exclusive 1-2-3-4 massaging-milking action. Factory set vacuum and pulsations. Fingertip "on and off" vacuum control. Non-creeping teat cups. Seamless pail with wide 9" opening and other easy-cleaning advantages.

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For Greater Safety and Better Taste

PASTEURIZE with the **SAFGARD** Home Milk Pasteurizer

The Only Complete Home Pasteurizer

- Twin Agitation
- Aeration
- Indirect Heating
- Simple, Automatic Operation

2-gallon capacity; 110-Volt AC Operation

Write Dept. A today for FREE folder

GUARD-IT MANUFACTURING CO.
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NO MATTER WHERE YOU GET *YOUR* HOME WATER

— well, stream or lake — it can be made clear and soft easily and at little cost. This free booklet explains how. Write for it today.

Oshkosh Filter & Softener Co.
Oshkosh, Wisconsin

COVER PICTURE

The cover picture shows 12 year old James Sellmyer, an Ohio farm boy, shelling corn with a one-third horsepower motor. The hand sheller has been adapted to power drive by bolting a flat pulley from an old churn to the inside of the fly wheel of the sheller.

them with aluminum paint or some other non-corrosive paint covering.

If the tank once rusts through so that it leaks it may be very thin in a number of places so that soldering the hole which is apparent may not solve the difficulty, or at least only temporarily. If the leak is in a seam, it may usually be soldered; if through the body, the inner tank may have to be replaced.

It would be a good plan to write to the maker of your milk cooler and ask him what is the best thing to do about a leaky tank. Some insulation will deteriorate very rapidly if it gets wet, while other types will stand up well enough so that a new inner tank might be justified.

Hot Water for Trailer Camp

▶**Question:** *We plan on starting a permanent trailer camp with hot and cold water piped to each trailer. Our central system is to be a 20 x 80 ft converted hen house with lavatories, showers, laundry, etc. The well with motor driven pump will be 200 ft from these rooms where the water is already piped. What would you suggest as a practical and economical method of heating water for eventually 75 to 100 trailers? We have electricity but not natural gas. What kind of heater and what kind and size of pipe should we use?* M. L., Ind.

▶**Answer:** You have asked me a big question which is a little out of the farm field. I will give you an answer but I really think you should check with your Department of Agricultural Engineering, Purdue University, Lafayette, Ind.

If you supply 100 trailers you will have a small size town. Assuming that the occupants of each trailer would use 20 gallons of hot water per day either in the trailer or in the showers and lavatories, you would have a maximum requirement of something like 2,000 gallons of hot water per day. That's lots of hot water. My guess is, that you would need a boiler of at

least, 400 gallons capacity. It should be well insulated to save on fuel and since you could hardly afford to keep a man there for firing it, I would suggest an oil burner.

If you wish to give good service to the trailers, you should have a circulating hot water system. If you do not have, then it would be necessary for anyone using water to run all the cold water out of the pipe and waste it before they could get any hot water. That would mean a pretty large wastage of water. If you could run the pipe in a circuit to serve all the trailers, you would need at least a 1½" pipe and it should be well insulated with some innert material such as fiberglass or rock wool and enclosed in waterproof housing. That might mean a concrete lined trench with a drain along the side of it, or, large clay sewer tile with the pipe supported in the top of the tile. The circulating system would call for a small motor driven pump to keep the water flowing in the pipe from the boiler at all times. It would, of course, flow back into the boiler if not used. ¾" pipe running up to the trailers from the main should be ample. They should also be insulated.

Noise on Telephone Line

▶**Question:** *I live nine miles from Union Springs and have my own private telephone line to their switchboard. It gave fine service until the power line was put right along the telephone line and then it was completely shut off because of the current on it. The company finally got it to operate but it has such a hum, it is hard to understand and to be understood. After they put in the power line it took another strand of wire. If you can be of service in this matter as to what to do to get the noise off, it will be deeply appreciated.*

L. H., Ala.

▶**Answer:** From your explanation I would say that the noise on your telephone line is due to induced currents from the power line. This is a very common occurrence. The way the Telephone Company reduces that noise is to transpose the two wires. By transposing, I mean interchanging the position of the two telephone wires about every mile along the route. If the wires are one above the other on opposite sides of the pole, you would switch the wires from one side to the other; or if the wires are on a cross-arm, you would switch from side to side fastening one wire down on the side of an intermediate pole in order to keep the wires from touching in making the transposition. You should have the same

garden watering

pays handsome profits

Many tests prove that yields can be substantially increased by watering vegetable gardens. For example, Virginia Agricultural Experiment Station studies show that the average garden, when watered, produced vegetables worth $44 more — and the average cost of electricity was only 45 cents for the entire summer. Watering also produces vegetables of higher quality which is essential for storage of frozen foods.

If you have a water system, water your garden frequently, soak it thoroughly, and get an abundant yield for table use and for canning or freezing. If you intend to install a new water system, be sure to see the popular Myers "H" Series *Ejecto* that pumps large quantities of water economically in all horsepower sizes. Coupon will bring catalogs and dealer's name.

THE F. E. MYERS & BRO. CO.
Dept. G-48 **Ashland, Ohio**

Send free literature on items checked below.

☐ Water Systems ☐ Power Sprayers
☐ Power Pumps ☐ Hand Sprayers
☐ Hand Pumps ☐ Hay Unloading Tools
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Now OUTSIDE RUNNING WATER ALL WINTER

IOWA FREEZELESS HYDRANTS

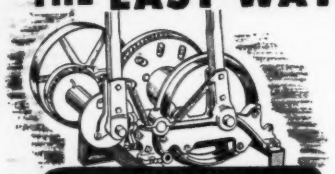
Prepare NOW for next winter! Give your livestock running water all winter with an Iowa Freezeless Hydrant. Avoid costly freeze-ups and time lost "thawing out."

- Toggle action lock lever prevents "dribbling."
- Automatically drains hydrant below frost line.
- Economical—no springs or screw threads to wear out, lower upkeep cost.

Installs on ANY farm water system. Ask your local dealer, or write for free circular.

WOODFORD HYDRANT CO., Des Moines 16, Iowa

UNLOAD HAY • • THE EASY WAY



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IRELAND

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Want to unload hay faster, easier . . . replace a team at the barn . . . save a driver's time? Then the Ireland Farm Hoist is for *you!* Get your haying done *early*—and then use this "Extra Hand" to speed up tough jobs year round. It's great for storing apples, potatoes, ice, feed, bales, pulling stumps. Your dealer has your Ireland Hoist now. Stop in and see it.

BENNETT-IRELAND INC.
647 Marsh St., Norwich, N.Y.

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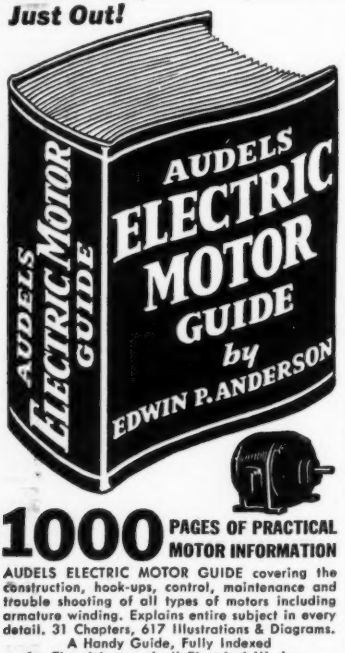

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length of line on one side as on the other. The induced currents will then tend to counteract each other.

It is practically impossible to get the noise out of a single wire grounded telephone system close to a power line.

Suction on Hand Pump

▶**Question:** *Please let me know how deep a well could be and still use a hand pump to draw water.* P. S., Pa.

▶**Answer:** Theoretically you can lift water 31 feet with a shallow well pump. The 31 feet being measured from the surface of the water to the pump valve. Practically it is not possible to lift water this distance. With ordinary pumping equipment it is not possible to create a perfect vacuum and the greater the lift, the longer you would have to pump in order to get water to flow. In general, the maximum lift for a suction pump should be about 24 feet and it would be much better and easier to prime the pump if the lift was not more than 15 or 18 feet.

Combination Electric-Oil Range

▶**Question:** *What is an oil stove?*

▶**Answer:** It depends on how you were brought up.

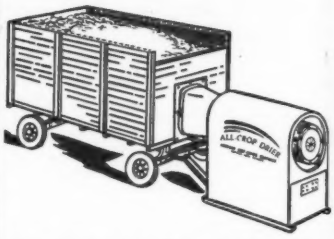
In April we published a question from Mrs. J. A., Pa. She asked who made a combination kerosene and electric range. Our answer was that we did not know of any. Letters "telling us" have been coming ever since. And some of you good ladies really *told us.* But we like it and appreciate your helpfulness in writing. All of those letters told about combination electric and fuel (coal or wood) burning ranges in which oil burners had been installed. Now Monarch has been advertising combination ranges in ELECTRICITY ON THE FARM for many years. Oil burners for them or any fuel burning stove are available. But to the editor, those are not oil stoves. To me an oil stove is the open-burnered wick or "blue flame" (and often smelly) kerosene stove that Aunt Clara used in the summer time so she would not have to build a fire in her range. There are no combination electric and "oil stoves" so far as I know.

Even misunderstandings can bring happy endings. You should have seen those letters from pleased users of Monarch and Universal combination ranges. Here is one from S. L. H., Mass.

"For seven years I've had a combination kerosene and electric

USE THE NEW

ALL-CROP DRIER



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Effectively and efficiently dries shelled corn or moisture grains for higher profits and safe storage.

Powered with a 5 H.P. electric motor . . . contains adjustable oil burner for operation at any temperature.

Investigate low drying costs by writing now for full information!

AMERICAN CROP-DRYING EQUIPMENT
CRYSTAL LAKE, ILLINOIS

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ENSILAGE CUTTER – HAY CHOPPER

EASILY OPERATED WITH 5 H.P. Motor! Economical—at Michigan State College filled 4 silos at electric power cost of less than 3c per ton! 15 Exclusive features include "streamline" direct delivery. Direct drive available (picture below)—Free Catalog at your dealer's or write.

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FAST MILKING FORDS MILKERS

Milks F-A-S-T-E-R with sure, gentle action. Cuts your chore time in half—gets more milk—increases your profits! Many exclusive features. Easier to clean—simpler to operate—no complicated adjustments. Always dependable. Thousands in use.

Portable "JEEP" On wheels—milks anywhere! Either electric or gasoline motor.

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LEADERS FOR 35 YEARS

range. I wouldn't part with it for it has been the most satisfactory piece of equipment in my home. The stove was really made for coal or wood, but I took out the grates and installed oil burners. I do not bake with oil heat, but I can heat water, cook, and heat my kitchen. I think it is 100% satisfactory."

Control for Cooling Water

▶**Question:** *Cooling milk with pumped water is our big job. I would like to make an arrangement so I could put a thermostat in the cooling tank to turn the water on and off as the water temperature changed. What do you suggest? I would like to hold the price down as much as I can.* E. T., Wis.

▶**Answer:** I do not know of any thermostatic control that will turn water off and on without the use of a rather expensive motor driven valve. Where the dairyman pumps directly from his well into his cooling tank, I would suggest the following set-up: get a metal bulb thermostat such as is used for soil heating control, placing the bulb in the water in the tank. These thermostat switches have about twenty-five ampere capacity so your pump could be connected directly in the thermostat circuit.

Farmstead Wiring Design

▶**Question:** *Kindly advise where I may obtain a copy of the newly published "Handbook of Farmstead Wiring" as mentioned in article "Changes in National Electric Code", December 1946 issue.*
A. J. G., Ohio

▶**Answer:** Copies of the handbook "Farmstead Wiring Design" may be obtained from the Industry Committee on Interior Wiring Design, Room 2650, 420 Lexington Avenue, New York, N. Y. The price of single copies is 40c.

Electric Lawnmower

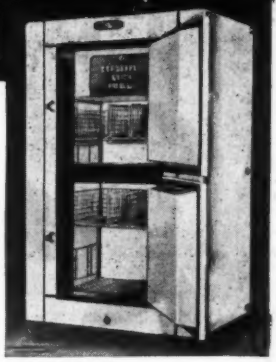
. . . . . (Here from page 12)

If you motorize your own mower, clean it up first and be sure the bearings are in good condition. Before you finish the job, sharpen the mower and adjust the reel so it just touches the strike plate. It will cut much better and use less power if it does not rub hard against the strike plate. Oil the mower every time you use it.

A ¼ hp motor should handle up to a 20" mower; possibly larger if it is kept in good adjustment. The motorizing job is not too difficult for a fair mechanic. GEO. W. KABLE.

YOUR DAILY FOOD

AT ITS BEST IN
WILSON "ZEROSAFE"



Proved through years of daily use by thousands, the Wilson "ZEROSAFE" Farm Freezer keeps home-frozen foods luscious, delicious, vitamin-fresh . . . freezes and stores vegetables, fruits, meats, poultry, sea-foods right in your own home in the varieties and quantities needed for year-around better living at lower cost.

Ten great new TIME-TESTED models from 15 to 120 cu. ft. take all of the guesswork out of home-freezing, with techniques so easy that even the youngsters can achieve perfect results.

WE TELL YOU HOW . . . Send your name and address to Dept. EF-12 today for your free copy of the "Wilson Farm Freezer GUIDE to Better Living," an invaluable booklet on the production of superquality home-frozen foods.

WILSON ZEROSAFE
Model FF-30 Farm Freezer (illustrated) will hold 1050 lbs. of food at the conservative average of 35 lbs. per cu. ft.

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FOR A LIFETIME OF SERVICE

Fig No. 1145

SANI-MATIC
ELECTRIC WATER HEATER
with rustproof Stainless Steel inner tank and cover

CHECK THESE FEATURES—

- Stainless Steel inner tank and cover—no rusting.
- Positive Action—heat as much water as you want—with the last drop as hot as the first.
- Heavy gauge steel body.
- Large top opening for ease in cleaning.
- Complete all around fibre glass insulation.
- Automatic operation.
- 10 gal. and 18 gal. sizes available.

DURABLE—SANITARY—ECONOMICAL—AUTOMATIC—the built in features which give you lasting top performance at a lower total cost. Write for details and your local dealer's name.

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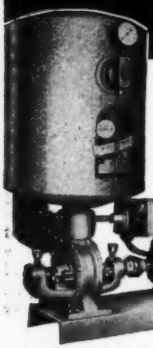
GENEROUS • LIVELY • SPARKLING
RUNNING WATER at LOWEST COST



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WRITE for BULLETIN 112-A

You make an investment in better living and greater farm profits when you install an APCO Master-Line Unit. Operating at slow speeds (1750 R.P.M.) and with only one moving part in the pump, you are set for many years of superb water service—enough for EVERY farm need including FIRE PROTECTION. 325 G.P.H. (others up to 3000 G.P.H.) Silent operation. Instant response. Life-Time replaceable pump covers. SATISFACTION GUARANTEED.

We Also Make Deep Well Pumps

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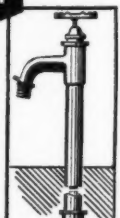
88 Loucks St., AURORA, ILLINOIS

WHY CARRY WATER? Put in a
FREE-FLO WATER HYDRANT
freeze-proof



HAVE WATER WHEREVER YOU NEED IT . . .

In the barn, water trough, milk house—any place that **saves your valuable time.** Free-Flo ground hydrant is positively non-freeze. Quickly installed. No complicated parts. Repairable without digging up. Treated leather *non-swell* shut-off ball **guaranteed 5 years.** Select bury length according to your frost line (each bury length holds spout 18" above ground). Order one or several.

Bury Length	Wt. Lbs.	$9.40
18"	12	
36"	15	10.50
48"	18	11.50
60"	21	12.95

Delivered C.O.D.
Express charges extra.

¾" iron pipe thread supply. ¾" hose thread on nozzle. 12" copper drain tube. All brass working parts.

MAIL THIS TODAY!

Free-Flo Company
220 S. Michigan Ave., Chicago, Ill.
Ship C.O.D. ..... Free-Flo Hydrants of ..... inch bury length.

Name.....
Address.....
Town.....State.....

What's New

These items are listed for the information of our readers. The statements are taken from manufacturer's literature. We take no responsibility for the claims made. For further information write directly to the addresses given.
—EDITOR.

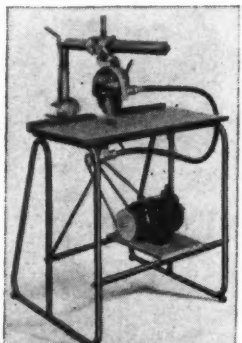
Gate Grip

This latch for an electric fence is made of Eastman Tenite. It is weather resistant, bright red, shock-

free and contains a compression spring which maintains the electric contact. Manufactured by Accessories Mfg. Co., Inc., Kansas City, Mo.

Flex Saw

The illustration shows a new saw made by The Flexsaw Co., 132 Grindstone Road, Port Austin,



Mich. It is driven by a 1 hp motor through a flexible shaft which permits easy adjustments. It crosscuts, rips, miters, bevels, dados, etc. Saw is 8".

New Publications

• LEARNING TO WELD. 32 pp, 25c, Lincoln Electric Co., Cleve-

PLAN AHEAD...
Breakdowns are Expensive!
Repair with a miller FARM WELDER

• It happens every time! Right in the middle of the harvest season your equipment breaks down. Be ready for it this season. *Get a Miller Farm Welder.* Weld right on the spot—no critical hours wasted going into town to have the part welded.

• Meets *all* requirements for operation on REA and rural power systems.

• The Miller Farm Welder is on display at implement dealers everywhere. Drop us a line for complete details.

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Operates off 115 volts, 50 or 60 cycles.

Keeps your car, tractor and electric fence 6 volt storage batteries fully charged. Not necessary to remove battery while charging.

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AUDEL, Publishers, 49 W. 23 St., New York 10, N.Y.

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P-20 Electric Water Heater. It's portable. Many uses. Just plug in. Safe . . . Underwriters' Approved. Hot water in a hurry. 1500 watts. Low cost. Guaranteed. Ask dealer or write direct for FREE booklet.

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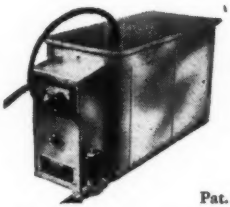
Electro-Line is built for farmers who appreciate fine farm tools — they have made it the leading brand of electric fence controllers. They choose Electro-Line because it is sturdily built for long life, has a powerful but safe intermittent shock, and low operating costs.

See your Electric-Line dealer — he has the model for you.

ELECTRO-LINE PRODUCTS CORP.
120 N. Broadway, Milwaukee 2, Wis.



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Protect the Milk Your Family Drinks!

Now you can protect the milk your family drinks. Pasteurize it yourself, in your own home, with the new Wright Automatic Home Pasteurizer. It pasteurizes right in the bottle, an approved method. It is completely automatic. You simply set the time clock to "start", and the bottled milk is pasteurized, then cooled in the same automatic operation. Merely requires ordinary house current, water tap and drain for overflow. Solid, durable, all-metal construction. Guaranteed. Three sizes, moderately priced, in capacities of 7, 23 and 53 quarts.

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Automatic Home
PASTEURIZER

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land 1, Ohio. This little book contains no advertising; no descriptions of welders or rods. It is just full of diagrams and photos showing how material should be prepared, welding rods held and moved to make different types of welds in different positions; also size rods and current settings to use for different jobs. Illustrations of typical repair jobs.

● KILOWATTS, MOTORS AND FARM ELECTRIC JOBS. Exten. Bul. 351, Univ. of Maine, Orono, Me. 40 pp. Written especially for 4-H leaders and members. An elementary treatise on electricity, how produced, sold, conveyed and used; formulae, descriptions. Chapters on wiring, motors, terms, etc.

Train Cows Early for Fast Milking

Fast milking increases milk and butterfat production from cows and saves time and labor.

The best time to train cows for fast milking is when they freshen with their first calves. Heifers usually respond well to fast milking if properly trained.

Heifers should be placed in the milking line about 2 weeks before they freshen, according to Floyd Johnston, Iowa State College Dairy Specialist. This gets them accustomed to their place in the line and to being handled by the dairyman.

Attention should be given to the teats to see that they are not cracked, cut or bruised. Injuries should be treated and healed before the heifer freshens.

When the calf comes, the heifer should be started with the fast milking routine, which follows four general steps:

First, the cow is made ready for the milker. The udder and teats should be wiped with a clean cloth wrung out of hot water, and two or three streams of milk drawn into the test cup.

Then the teat cups are put on. This should be done within a minute after the cow has been prepared for milking.

The third step is the actual milking. A timer should be used, and most cows should be milked in 3 or 4 minutes.

The final step is stripping. This can be done by machine, with care being taken that the cow is not stripped too long. While this is the routine for machine milking, the same steps should be taken with hand milking.

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Running Water All Year 'Round

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DEADLY, quickly, over wide areas, MISTMASTER Insecticide Sprayer is atomic in its effect. Sprays liquid insecticide, include DDT, up to a distance of forty feet.

Simply plug-in at any electric outlet. Spray stored grain or protect other foods from bug, insect and vermin damage. For disinfecting jobs in home, barn, granary, dairy or hatchery.

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A HOUSE DIVIDED costs you more!

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SAVE TIME, WORK AND MONEY

A HOUSE DIVIDED between electricity and old-fashioned methods costs you more because it's less efficient.

Completely electrified homes and farms, using low-cost, easy-to-operate, time-and-labor-saving electrical conveniences, mean *better* living, *easier* work and lower cost.

The *exclusive* use of electricity costs you less because you then employ the *best* method for every job at the *low-cost* All-Electric rate.

Job for job, use for use, electricity is best. Don't use two or more services when *one does more for less.*

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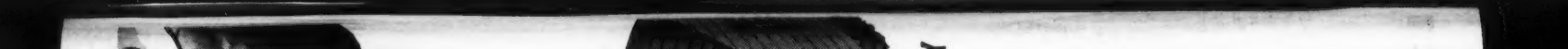

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DIAL YOUR FAVORITE RECIPE

POWERFUL governor controlled MOTOR maintains automatic Full Power on all speeds. Beaters never vary their speed as batter thins-out or thickens-up, whether set slow or fast for EVEN mixing.

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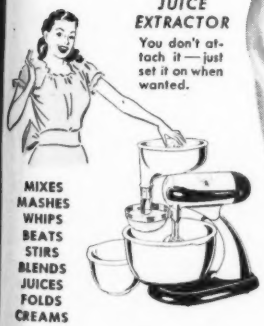

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You don't attach it—just set it on when wanted.

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